Sequence Listing

<110> Ashkenazi, Avi Baker Kevin P. Botstein, David Desnoyers, Luc Eaton, Dan Ferrara, Napoleon Filvaroff, Ellen Fong, Sherman Gao, Wei-Qiang Gerber, Hanspeter Gerritsen, Mary E. Goddard, Audrey Godowski, Paul J. Grimaldi, J. Christopher Gurney, Austin L. Hillan, Kenneth J Kljavin, Ivar J. Kuo, Sophia S. Napier, Mary A. Pan, James; Paoni, Nicholas F. Roy, Margaret Ann Shelton, David L. Stewart, Timothy A. Tumas, Daniel Williams, P. Mickey Wood, William I.

 $<\!\!120\!\!>$ Secreted and Transmembrane Polypeptides and Nucleic Acids Encoding the Same

<130> P2630P1C74

<150> 09/918585

<151> 2001-07-30

<150> 60/062250

<151> 1997-10-17

<150> 60/064249

<151> 1997-11-03

<150> 60/065311

<151> 1997-11-13

<150> 60/066364

<151> 1997-11-21

<150> 60/077450

<151> 1998-03-10

<150> 60/077632

<151> 1998-03-11

<150> 60/077641

<151> 1998-03-11

- <150> 60/077649 <151> 1998-03-11
- <150> 60/077791
- <151> 1998-03-12
- <150> 60/078004
- <151> 1998-03-13
- <150> 60/078886
- <151> 1998-03-20
- <150> 60/078936
- <151> 1998-03-20
- <150> 60/078910
- <151> 1998-03-20
- <150> 60/078939
- <151> 1998-03-20
- <150> 60/079294
- <151> 1998-03-25
- <150> 60/079656
- <151> 1998-03-26
- <150> 60/079664
- <151> 1998-03-27
- <150> 60/079689
- <151> 1998-03-27
- <150> 60/079663
- <151> 1998-03-27
- <150> 60/079728
- <151> 1998-03-27
- <150> 60/079786
- <151> 1998-03-27
- <150> 60/079920
- <151> 1998-03-30
- <150> 60/079923 <151> 1998-03-30
- <150> 60/080105 <151> 1998-03-31
- <150> 60/080107
- <151> 1998-03-31
- <150> 60/080165
- <151> 1998-03-31
- <150> 60/080194

- <151> 1998-03-31
- <150> 60/080327
- <151> 1998-04-01
- <150> 60/080328
- <151> 1998-04-01
- <150> 60/080333
- <151> 1998-04-01
- <150> 60/080334
- <151> 1998-04-01
- <150> 60/081070
- <151> 1998-04-08
- <150> 60/081049
- <151> 1998-04-08
- <150> 60/081071
- <151> 1998-04-08
- <150> 60/081195
- <151> 1998-04-08
- <150> 60/081203
- <151> 1998-04-09
- <150> 60/081229
- <151> 1998-04-09
- <150> 60/081955
- <151> 1998-04-15
- <150> 60/081817
- <151> 1998-04-15
- <150> 60/081819
- <151> 1998-04-15
- <150> 60/081952
- <151> 1998-04-15
- <150> 60/081838
- <151> 1998-04-15
- <150> 60/082568
- <151> 1998-04-21
- <150> 60/082569
- <151> 1998-04-21
- <150> 60/082704
- <151> 1998-04-22
- <150> 60/082804
- <151> 1998-04-22

<150> <151>	60/082700 1998-04 - 22
<150> <151>	60/082797 1998-04-22
<150> <151>	60/082796 1998-04-23
<150> <151>	60/083336 1998-04 - 27
<150> <151>	60/083322 1998-04-28
	60/083392 1998-04-29
<150> <151>	60/083495 1998-04-29
<150> <151>	60/083496 1998-04-29
<150> <151>	60/083499 1998-04-29
<150> <151>	60/083545 1998-04-29
<150> <151>	60/083554 1998-04-29
<150> <151>	60/083558 1998-04-29
<150> <151>	60/083559 1998-04-29
<150> <151>	60/083500 1998-04-29
<150> <151>	60/083742 1998-04-30
<150> <151>	60/084366 1998-05-05
<150> <151>	60/084414 1998-05-06
<150> <151>	60/084441 1998-05-06
<150> <151>	60/084637 1998-05-07

<150> 60/084639

- <151> 1998-05-07
- <150> 60/084640
- <151> 1998-05-07
- <150> 60/084598
- <151> 1998-05-07
- <150> 60/084600
- <151> 1998-5-07
- <150> 60/084627
- <151> 1998-05-07
- <150> 60/084643 <151> 1998-05-07
- <150> 60/085339
- <151> 1998-05-13
- <150> 60/085338
- <151> 1998-05-13
- <150> 60/085323
- <151> 1998-05-13
- <150> 60/085582
- <151> 1998-05-15
- <150> 60/085700
- <151> 1998-05-15
- <150> 60/085689
- <151> 1998-05-15
- <150> 60/085579
- <151> 1998-05-15
- <150> 60/085580
- <151> 1998-05-15
- <150> 60/085573
- <151> 1998-05-15
- <150> 60/085704 <151> 1998-05-15
- <150> 60/085697 . <151> 1998-05-15
- <150> 60/086023
- <151> 1998-05-18
- <150> 60/086430
- <151> 1998-05-22
- <150> 60/086392
- <151> 1998-05-22

- <150> 60/086486 <151> 1998-05-22
- <150> 60/086414
- <151> 1998-05-22
- <150> 60/087208
- <151> 1998-05-28
- <150> 60/087106
- <151> 1998-05-28
- <150> 60/087098
- <151> 1998-05-28
- <150> 60/091010
- <151> 1998-06-26
- <150> 60/090863
- <151> 1998-06-26
- <150> 60/091359
- <151> 1998-07-01
- <150> 60/094651
- <151> 1998-07-30
- <150> 60/100038
- <151> 1998-09-11
- <150> 60/109304
- <151> 1998-11-20
- <150> 60/113296
- <151> 1998-12-22
- <150> 60/113621
- <151> 1998-12-23
- <150> 60/123957
- <151> 1999-03-12
- <150> 60/126773
- <151> 1999-03-29
- <150> 60/130232
- <151> 1999-04-21
- <150> 60/131022 <151> 1999-04-26
- <150> 60/131445
- <151> 1999-04-28
- <150> 60/134287
- <151> 1999-05-14
- <150> 60/139557

- <151> 1999-06-16
- <150> 60/141037
- <151> 1999-06-23
- <150> 60/142680
- <151> 1999-07-07
- <150> 60/145698
- <151> 1999-07-26
- <150> 60/146222
- <151> 1999-07-28
- <150> 60/162506
- <151> 1999-10-29
- <150> 09/040220
- <151> 1998- 03-17
- <150> 09/105413
- <151> 1998-06-26
- <150> 09/168978
- <151> 1998-10-07
- <150> 09/184216
- <151> 1998-11-02
- <150> 09/187368
- <151> 1998-11-06
- <150> 09/202054
- <151> 1998-12-07
- <150> 09/218517
- <151> 1998-12-22
- <150> 09/254465
- <151> 1999-03-05
- <150> 09/265686
- <151> 1999-03-10
- <150> 09/267213
- <151> 1999-03-12
- <150> 09/284291
- <151> 1999-04-12
- <150> 09/311832
- <151> 1999-05-14
- <150> 09/380137
- <151> 1999-08-25
- <150> 09/380138
- <151> 1999-08-25

- <150> 09/380142 <151> 1999-08-25
- <150> 09/709238
- <151> 2000-11-08
- <150> 09/723749
- <151> 2000-11-27
- <150> 09/747259 <151> 2000-12-20
- <150> 09/816744
- <151> 2001-03-22
- <150> 09/816920
- <151> 2001-03-22
- <150> 09/854280
- <151> 2001-05-10
- <150> 09/854208 <151> 2001-05-10
- <150> 09/872035 <151> 2001-06-01
- <150> 09/874503
- <151> 2001-06-05
- <150> 09/882636 <151> 2001-06-14
- <150> 09/886342 <151> 2001- 06-19
- <150> PCT/US98/21141
- <151> 1998-10-07
- <150> PCT/US98/24855
- <151> 1998-11-20
- <150> PCT/US99/00106
- <151> 1999-01-05
- <150> PCT/US99/05028
- <151> 1999-03-08
- <150> PCT/US99/05190
- <151> 1999-03-10
- <150> PCT/US99/10733
- <151> 1999-05-14
- <150> PCT/US99/12252
- <151> 1999-06-02
- <150> PCT/US99/28313

- <151> 1999-11-30
- <150> PCT/US99/28551
- <151> 1999-12-02
- <150> PCT/US99/28565
- <151> 1999-12-02
- <150> PCT/US99/30095
- <151> 1999-12-16
- <150> PCT/US99/31243
- <151> 1999-12-30
- <150> PCT/US99/31274
- <151> 1999-12-30
- <150> PCT/US00/00219
- <151> 2000-05-01
- <150> PCT/US00/00277
- <151> 2000-01-06
- <150> PCT/US00/00376
- <151> 2000-01-06
- <150> PCT/US00/03565
- <151> 2000-02-11
- <150> PCT/US00/04341
- <151> 2000-02-18
- <150> PCT/US00/05841
- <151> 2000-03-02
- <150> PCT/US00/07532
- <151> 2000-03-21
- <150> PCT/US00/05004
- <151> 2000-02-24
- <150> PCT/US00/06319
- <151> 2000-03-10
- <150> PCT/US00/08439
- <151> 2000-03-30
- <150> PCT/US00/13705
- <151> 2000-05-17
- <150> PCT/US00/14042
- <151> 2000-05-22
- <150> PCT/US00/14941
- <151> 2000-05-30
- <150> PCT/US00/15264
- <151> 2000-06-02

- <150> PCT/US00/20710
- <151> 2000-07-28
- <150> PCT/US00/23328
- <151> 2000-08-24
- <150> PCT/US00/32678
- <151> 2000-12-01
- <150> PCT/US00/34956
- <151> 2000-12-20
- <150> PCT/US01/06520
- <151> 2001-02-28
- <150> PCT/US01/09552
- <151> 2001-03-22
- <150> PCT/US01/17092
- <151> 2001-05-25
- <150> PCT/US01/17800
- <151> 2001-06-01
- <150> PCT/US01/19692
- <151> 2001-06-20
- <150> PCT/US01/21066
- <151> 2001-06-29
- <150> PCT/US01/21735
- <151> 2001-07-09
- <160> 624
- <210> 1
- <211> 1743
- <212> DNA
- <213> Homo sapiens
- <400> 1
- ccaggtccaa ctgcacctcg gttctatcga ttgaattccc cggggatcct 50
- ctagagatcc ctcgacctcg acccacgcgt ccgccaagct ggccctgcac 100
- ggctgcaagg gaggctcctg tggacaggcc aggcaggtgg gcctcaggag 150
- gtgcctccag gcggccagtg ggcctgaggc cccagcaagg gctagggtcc 200
- atctccagtc ccaggacaca gcagcggcca ccatggccac gcctgggctc 250
- cagcagcatc agcagcccc aggaccgggg gaggcacagg tggcccccac 300
- cacceggagg ageageteet geeeetgtee gggggatgae tgatteteet 350
- ccgccaggcc acccagagga gaaggccacc ccgcctggag gcacaggcca 400
- tgaggggctc tcaggaggtg ctgctgatgt ggcttctggt gttggcagtg 450

```
ggcggcacag agcacgccta ccggcccggc cgttagggtg tgtgctgtcc 500
cgggctcacg gggaccctgt ctccgagtcg ttcgtgcagc gtgtgtacca 550
gecetteete accacetgeg acgggeaceg ggeetgeage acetacegaa 600
ccatttatag gaccgcctac cgccgcagcc ctgggctggc ccctgccagg 650
cctcgctacg cgtgctgccc cggctggaag aggaccagcg ggcttcctgg 700
ggcctgtgga gcagcaatat gccagccgcc atgccggaac ggagggagct 750
gtgtccagcc tggccgctgc cgctgccctg caggatggcg gggtgacact 800
tgccagtcag atgtggatga atgcagtgct aggaggggcg gctgtcccca 850
gcgctgcatc aacaccgccg gcagttactg gtgccagtgt tgggaggggc 900
acagcctgtc tgcagacggt acactctgtg tgcccaaggg agggcccccc 950
agggtggccc ccaacccgac aggagtggac agtgcaatga aggaagaagt 1000
gcagaggctg cagtccaggg tggacctgct ggaggagaag ctgcagctgg 1050
tgctggcccc actgcacagc ctggcctcgc aggcactgga gcatgggctc 1100
ccggaccccg gcagcctcct ggtgcactcc ttccagcagc tcggccgcat 1150
cgactccctg agcgagcaga tttccttcct ggaggagcag ctggggtcct 1200
gctcctgcaa gaaagactcg tgactgccca gcgccccagg ctggactgag 1250
cccctcacgc cgccctgcag cccccatgcc cctgcccaac atgctggggg 1300
tecagaagee aceteggggt gactgagegg aaggeeagge agggeettee 1350
teetttteet ecteeette ectegggagg gteeceagae ectggeatgg 1400
gatgggctgg gattttttt gtgaatccac ccctggctac ccccaccctg 1450
qttaccccaa cqqcatccca aggccaggtg ggccctcagc tgagggaagg 1500
tacqaqttcc cctgctggag cctgggaccc atggcacagg ccaggcagcc 1550
cggaggetgg gtggggette agtggggget getgeetgae ecceageaea 1600
ataaaaatga aacgtgaaaa aaaaaaaaaa aaaaaaaaa aaaaaaaaa 1650
aaaaaaaagg gcggccgcga ctctagagtc gacctgcaga agcttggccg 1700
ccatggccca acttgtttat tgcagcttat aatggttaca aat 1743
```

<210> 2

<211> 295

<212> PRT

<213> Homo sapiens

<400> 2

Met Thr Asp Ser Pro Pro Pro Gly His Pro Glu Glu Lys Ala Thr Pro Pro Gly Gly Thr Gly His Glu Gly Leu Ser Gly Gly Ala Ala Asp Val Ala Ser Gly Val Gly Ser Gly Arg His Arg Ala Arg Leu Pro Ala Arg Pro Leu Gly Cys Val Leu Ser Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln Arg Cys Ile Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu Glu Glu Lys Leu Gln Leu Val Leu 230 Ala Pro Leu His Ser Leu Ala Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu Val His Ser Phe Gln Gln Leu Gly 260 Arg Ile Asp Ser Leu Ser Glu Gln Ile Ser Phe Leu Glu Gln Leu Gly Ser Cys Ser Cys Lys Lys Asp Ser

290 295

```
<210> 3
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 3
tggagcagca atatgccagc c 21
<210> 4
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 4
 ttttccactc ctgtcgggtt gg 22
<210> 5
<211> 46
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 5
 ggtgacactt gccagtcaga tgtggatgaa tgcagtgcta ggaggg 46
<210> 6
<211> 2945
<212> DNA
<213> Homo sapiens
<400> 6
 cgctcgcccc gtcgcccctc gcctccccgc agagtcccct cgcggcagca 50
 gatgtgtgtg gggtcagccc acggcgggga ctatggtgaa attcccggcg 100
 ctcacgcact actggcccct gatccggttc ttggtgcccc tgggcatcac 150
 caacatagcc atcgacttcg gggagcaggc cttgaaccgg ggcattgctg 200
 ctgtcaagga ggatgcagtc gagatgctgg ccagctacgg gctggcgtac 250
 tccctcatga agttcttcac gggtcccatg agtgacttca aaaatgtggg 300
 cctggtgttt gtgaacagca agagagacag gaccaaagcc gtcctgtgta 350
 tggtggtggc aggggccatc gctgccgtct ttcacacact gatagcttat 400
```

agtgatttag gatactacat tatcaataaa ctgcaccatg tggacgagtc 450

ggtggggagc aagacgagaa gggccttcct gtacctcgcc gcctttcctt 500 tcatggacgc aatggcatgg acccatgctg gcattctctt aaaacacaaa 550 tacagtttcc tggtgggatg tgcctcaatc tcagatgtca tagctcaggt 600 tgtttttgta gccattttgc ttcacagtca cctggaatgc cgggagcccc 650 tgctcatccc gatcctctcc ttgtacatgg gcgcacttgt gcgctgcacc 700 accetgtgcc tgggctacta caagaacatt cacgacatca tccctgacag 750 aagtggcccg gagctggggg gagatgcaac aataagaaag atgctgagct 800 tctggtggcc tttggctcta attctggcca cacagagaat cagtcggcct 850 attgtcaacc tctttgtttc ccgggacctt ggtggcagtt ctgcagccac 900 agaggcagtg gcgattttga cagccacata ccctgtgggt cacatgccat 950 acggctggtt gacggaaatc cgtgctgtgt atcctgcttt cgacaagaat 1000 aaccccagca acaaactggt gagcacgagc aacacagtca cggcagccca 1050 catcaagaag ttcaccttcg tctgcatggc tctgtcactc acgctctgtt 1100 tcqtgatgtt ttggacaccc aacgtgtctg agaaaatctt gatagacatc 1150 atcggagtgg actttgcctt tgcagaactc tgtgttgttc ctttgcggat 1200 cttctccttc ttcccagttc cagtcacagt gagggcgcat ctcaccgggt 1250 ggctgatgac actgaagaaa accttcgtcc ttgcccccag ctctgtgctg 1300 cggatcatcg tecteatege cageetegtg gteetacect acetgggggt 1350 gcacggtgcg accetgggcg tgggctccct cctggcgggc tttgtgggag 1400 aatccaccat ggtcgccatc gctgcgtgct atgtctaccg gaagcagaaa 1450 aagaagatgg agaatgagtc ggccacggag ggggaagact ctgccatgac 1500 agacatgcct ccgacagagg aggtgacaga catcgtggaa atgagagagg 1550 agaatgaata aggcacggga cgccatgggc actgcaggga cggtcagtca 1600 ggatgacact teggeateat etetteeete teecategta tittgtteee 1650 ttttttttgt tttgttttgg taatgaaaga ggccttgatt taaaggtttc 1700 gtgtcaattc tctagcatac tgggtatgct cacactgacg gggggaccta 1750 gtgaatggtc tttactgttg ctatgtaaaa acaaacgaaa caactgactt 1800 catacccctg cctcacgaaa acccaaaaga cacagctgcc tcacggttga 1850 cgttgtgtcc tcctcccctg gacaatctcc tcttggaacc aaaggactgc 1900

agetgtgcca tegegeeteg gteaccetge acageaggee acagactete 1950 ctgtccccct tcatcgctct taagaatcaa caggttaaaa ctcggcttcc 2000 tttgatttgc ttcccagtca catggccgta caaagagatg gagccccggt 2050 ggcctcttaa atttcccttc tgccacggag ttcgaaacca tctactccac 2100 acatgcagga ggcgggtggc acgctgcagc ccggagtccc cgttcacact 2150 gaggaacgga gacctgtgac cacagcaggc tgacagatgg acagaatctc 2200 ccgtagaaag gtttggtttg aaatgccccg ggggcagcaa actgacatgg 2250 ttgaatgata gcatttcact ctgcgttctc ctagatctga gcaagctgtc 2300 agttctcacc cccaccgtgt atatacatga gctaactttt ttaaattgtc 2350 acaaaagcgc atctccagat tccagaccct gccgcatgac ttttcctgaa 2400 ggcttgcttt tccctcgcct ttcctgaagg tcgcattaga gcgagtcaca 2450 tggagcatcc taactttgca ttttagtttt tacagtgaac tgaagcttta 2500 agtotoatoo agcattotaa tgooaggttg otgtagggta acttttgaag 2550 tagatatatt acctggttct gctatcctta gtcataactc tgcggtacag 2600 gtaattgaga atgtactacg gtacttccct cccacaccat acgataaagc 2650 aagacatttt ataacgatac cagagtcact atgtggtcct ccctgaaata 2700 acgcattcga aatccatgca gtgcagtata tttttctaag ttttggaaag 2750 caggtttttt cctttaaaaa aattatagac acggttcact aaattgattt 2800 agtcagaatt cctagactga aagaacctaa acaaaaaaat attttaaaga 2850 tataaatata tgctgtatat gttatgtaat ttattttagg ctataataca 2900 tttcctattt tcgcattttc aataaaatgt ctctaataca aaaaa 2945

<210> 7

<211> 492

<212> PRT

<213> Homo sapiens

<400> 7

Met Val Lys Phe Pro Ala Leu Thr His Tyr Trp Pro Leu Ile Arg
1 5 10 15

Phe Leu Val Pro Leu Gly Ile Thr Asn Ile Ala Ile Asp Phe Gly
20 25 30

Glu Gln Ala Leu Asn Arg Gly Ile Ala Ala Val Lys Glu Asp Ala 35 40 45

Val Glu Met Leu Ala Ser Tyr Gly Leu Ala Tyr Ser Leu Met Lys

				50					55					60
Phe	Phe	Thr	Gly	Pro 65	Met	Ser	Asp	Phe	Lys 70	Asn	Val	Gly	Leu	Val 75
Phe	Val	Asn	Ser	Lys 80	Arg	Asp	Arg	Thr	Lys 85	Ala	Val	Leu	Cys	Met 90
Val	Val	Ala	Gly	Ala 95	Ile	Ala	Ala	Val	Phe 100	His	Thr	Leu	Ile	Ala 105
Tyr	Ser	Asp	Leu	Gly 110	Tyr	Tyr	Ile	Ile	Asn 115	Lys	Leu	His	His	Val 120
Asp	Glu	Ser	Val	Gly 125	Ser	Lys	Thr	Arg	Arg 130	Ala	Phe	Leu	Tyr	Leu 135
Ala	Ala	Phe	Pro	Phe 140	Met	Asp	Ala	Met	Ala 145	Trp	Thr	His	Ala	Gly 150
Ile	Leu	Leu	Lys	His 155	Lys	Tyr	Ser	Phe	Leu 160	Val	Gly	Cys	Ala	Ser 165
Ile	Ser	Asp	Val	Ile 170	Ala	Gln	Val	Val	Phe 175	Val	Ala	Ile	Leu	Leu 180
His	Ser	His	Leu	Glu 185	Суз	Arg	Glu	Pro	Leu 190	Leu	Ile	Pro	Ile	Leu 195
Ser	Leu	Tyr	Met	Gly 200	Ala	Leu	Val	Arg	Cys 205	Thr	Thr	Leu	Cys	Let 210
Gly	Tyr	Tyr	Lys	Asn 215	Ile	His	Asp	Ile	Ile 220	Pro	Asp	Arg	Ser	Gly 225
Pro	Glu	Leu	Gly	Gly 230		Ala	Thr	Ile	Arg 235	Lys	Met	Leu	Ser	Phe 240
Trp	Trp	Pro	Leu	Ala 245	Leu	Ile	Leu	Ala	Thr 250	Gln	Arg	Ile	Ser	Arg 255
Pro	Ile	Val	Asn	Leu 260		Val	Ser	Arg	Asp 265		Gly	Gly	Ser	Sei 270
Ala	Ala	Thr	Glu	Ala 275		Ala	Ile	Leu	Thr 280	Ala	Thr	Tyr	Pro	Va] 285
Gly	His	Met	Pro	Tyr 290		Trp	Leu	Thr	Glu 295	Ile	Arg	Ala	Val	Ту: 300
	77.	DI	71	T	7 ~~	7	Dwo	C^~	7.00	T 1/0	T 017	W-1	Sar	Th.

Pro Ala Phe Asp Lys Asn Asn Pro Ser Asn Lys Leu Val Ser Thr 315

Ser Asn Thr Val Thr Ala Ala His Ile Lys Lys Phe Thr Phe Val 320

Cys Met Ala Leu Ser Leu Thr Leu Cys Phe Val Met Phe Trp Thr 335

```
Pro Asn Val Ser Glu Lys Ile Leu Ile Asp Ile Ile Gly Val Asp
Phe Ala Phe Ala Glu Leu Cys Val Val Pro Leu Arg Ile Phe Ser
                                    370
                365
Phe Phe Pro Val Pro Val Thr Val Arg Ala His Leu Thr Gly Trp
                                                         390
                                    385
Leu Met Thr Leu Lys Lys Thr Phe Val Leu Ala Pro Ser Ser Val
                                                         405
                395
                                     400
Leu Arg Ile Ile Val Leu Ile Ala Ser Leu Val Val Leu Pro Tyr
                                                         420
                410
Leu Gly Val His Gly Ala Thr Leu Gly Val Gly Ser Leu Leu Ala
                                                         435
                425
Gly Phe Val Gly Glu Ser Thr Met Val Ala Ile Ala Ala Cys Tyr
                440
Val Tyr Arg Lys Gln Lys Lys Met Glu Asn Glu Ser Ala Thr
                455
Glu Gly Glu Asp Ser Ala Met Thr Asp Met Pro Pro Thr Glu Glu
                470
                                     475
```

Val Thr Asp Ile Val Glu Met Arg Glu Glu Asn Glu 485 490

<210> 8 <211> 535 <212> DNA <213> Homo sapiens

<220>

<221> unsure

<222> 33, 66, 96, 387

<223> unknown base

<400> 8
 cctgacagaa gtgccccgga gctggggag atncaacatt aagaagatgc 50

tgagcttctg gtgccntttg gctctaattc tggccacaca gagaancagt 100
 cggcctattg tcaacctctt tgtttcccgg gaccttggtg gcagttctgc 150
 agccacagag gcagtggcga ttttgacagc cacataccct gtgggtcaca 200
 tgccatacgg ctggttgacg gaaatccgtg ctgtgtatcc tgctttcgac 250
 aagaataacc ccagcaacaa actggtgagc acgagcaaca cagtcacggc 300
 ggcccacatc aagaagttca ccttcgtctg catggctctg tcactcacgc 350
 tctgtttcgt gatgttttgg acacccaacg tgtctgngaa aatcttgata 400
 gacatcatcg gagtggactt tgcctttgca gaactctgtg ttgttccttt 450

<213> Artificial Sequence

```
geggatette teettettee eagtteeagt cacagtgagg gegeatetea 500
 ccgggtggct gatgacactg aagaaaacct tcgtc 535
<210> 9
<211> 434
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 32, 54, 80, 111, 117, 122, 139, 193, 205, 221, 226, 228, 273,
      293, 296, 305, 336, 358, 361
<223> unknown base
<400> 9
 tgacggaatc ccgggctggg tatcctggtt tngacaagat aaacccccag 50
 caanaaattg gggagcaggg caaaacagtn acgggcagcc cacatcaaga 100
 agttcacctt ngtttgnatg gntctgtcaa ctcacgctnt gtttcgtgat 150
 gttttggaca cccaaagtgt ttgagaaaat tttgatagac atnatcggag 200
 tggantttgc ctttgcagaa ntttgngntg ttcctttgcg gattttctcc 250
 tttttcccag ttccagtcac agngagggcg catctcaccg ggnggntgat 300
 gacantgaag aaaacctttg tccttgcccc cagctntttg gtgcggatca 350
 ttgtcctnat ngccagcctt gtggtcctac cctacctggg ggtgcacggt 400
 qcqaccctqq gcgtgggttc cctcctggcg ggca 434
<210> 10
<211> 154
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 33, 49, 68, 83, 90, 98, 119
<223> unknown base
<400> 10
 tattcccagt tccggtcacg gggagggcgc atntcaccgg gtggctgang 50
 acactgaaga aaaccttngt ccttgccccc agntttgtgn tgcggatnat 100
 cgtcctcatc gccagcctng tggtcctacc ctacctgggg gtgcacggtg 150
 agac 154
<210> 11
<211> 24
<212> DNA
```

```
<220>
<223> Synthetic oligonucleotide probe
<400> 11
 ctgatccggt tcttggtgcc cctg 24
<210> 12
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 12
gctctgtcac tcacgctc 18
<210> 13
<211> 18
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 13
tcatctcttc cctctccc 18
<210> 14
<211> 18
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 14
 ccttccgcca cggagttc 18
<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
 ggcaaagtcc actccgatga tgtc 24
<210> 16
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
```

```
<400> 16
gcctgctgtg gtcacaggtc tccg 24
<210> 17
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 17
tcggggagca ggccttgaac cggggcattg ctgctgtcaa ggagg 45
<210> 18
<211> 1901
<212> DNA
<213> Homo sapiens
<400> 18
 gccccgcgcc cggcgccggg cgcccgaagc cgggagccac cgccatgggg 50
 gcctgcctgg gagcctgctc cctgctcagc tgcgcgtcct gcctctgcgg 100
 ctctgccccc tgcatcctgt gcagctgctg ccccgccagc cgcaactcca 150
 ccgtgagccg cctcatcttc acgttcttcc tcttcctggg ggtgctggtg 200
 tocatcatta tgctgagccc gggcgtggag agtcagctct acaagctgcc 250
 ctgggtgtgt gaggagggg ccgggatccc caccgtcctg cagggccaca 300
 tegactgtgg etecetgett ggetaeegeg etgtetaeeg eatgtgette 350
 gccacggcgg ccttcttctt cttctttttc accctgctca tgctctgcgt 400
 gagcagcagc cgggaccccc gggctgccat ccagaatggg ttttggttct 450
 ttaagttoct gatoctggtg ggcotcaccg tgggtgcctt ctacatccct 500
 gacggctcct tcaccaacat ctggttctac ttcggcgtcg tgggctcctt 550
 cctcttcatc ctcatccagc tggtgctgct catcgacttt gcgcactcct 600
 ggaaccagcg gtggctgggc aaggccgagg agtgcgattc ccgtgcctgg 650
 tacgcaggcc tettettett caeteteete ttetaettge 'tgtegatege 700
 ggccgtggcg ctgatgttca tgtactacac tgagcccagc ggctgccacg 750
 agggcaaggt cttcatcagc ctcaacctca ccttctgtgt ctgcgtgtcc 800
 getgeaggee teggteatea cectetaeae catgtttgte acetggteag 900
```

ccctatccag tatccctgaa cagaaatgca acccccattt gccaacccag 950

ctgggcaacg agacagttgt ggcaggcccc gagggctatg agacccagtg 1000 gtgggatgcc ccgagcattg tgggcctcat catcttcctc ctgtgcaccc 1050 tetteateag tetgegetee teagaceace ggeaggtgaa eageetgatg 1100 cagaccgagg agtgcccacc tatgctagac gccacacagc agcagcagca 1150 gcaggtggca gcctgtgagg gccgggcctt tgacaacgag caggacggcg 1200 tcacctacag ctactccttc ttccacttct gcctggtgct ggcctcactg 1250 cacgtcatga tgacgctcac caactggtac aagcccggtg agacccggaa 1300 gatgatcagc acgtggaccg ccgtgtgggt gaagatctgt gccagctggg 1350 cagggctgct cctctacctg tggaccctgg tagccccact cctcctgcgc 1400 aaccgcgact tcagctgagg cagcctcaca gcctgccatc tggtgcctcc 1450 tgccacctgg tgcctctcgg ctcggtgaca gccaacctgc cccctcccca 1500 caccaatcag ccaggetgag cccccaccc tgccccagct ccaggacctg 1550 cccctgagcc gggccttcta gtcgtagtgc cttcagggtc cgaggagcat 1600 caggetectg cagageeeca tececeegee acacecacae ggtggagetg 1650 cetetteett eccetectee etgttgeeca tacteageat eteggatgaa 1700 agggctccct tgtcctcagg ctccacggga gcggggctgc tggagagagc 1750 ggggaactcc caccacagtg gggcatccgg cactgaagcc ctggtgttcc 1800 tggtcacgtc ccccagggga ccctgcccc ttcctggact tcgtgcctta 1850 ctgagtctct aagacttttt ctaataaaca agccagtgcg tgtaaaaaaa 1900 a 1901

<210> 19

<211> 457

<212> PRT

<213> Homo sapiens

<400> 19

Met Gly Ala Cys Leu Gly Ala Cys Ser Leu Leu Ser Cys Ala Ser 1 5 10 15

Cys Leu Cys Gly Ser Ala Pro Cys Ile Leu Cys Ser Cys Cys Pro 20 25 30

Ala Ser Arg Asn Ser Thr Val Ser Arg Leu Ile Phe Thr Phe Phe 35 40 45

Leu Phe Leu Gly Val Leu Val Ser Ile Ile Met Leu Ser Pro Gly 50 55 60

Val Glu Ser Gln Leu Tyr Lys Leu Pro Trp Val Cys Glu Glu Gly Ala Gly Ile Pro Thr Val Leu Gln Gly His Ile Asp Cys Gly Ser Leu Leu Gly Tyr Arg Ala Val Tyr Arg Met Cys Phe Ala Thr Ala Ala Phe Phe Phe Phe Phe Thr Leu Leu Met Leu Cys Val Ser Ser Ser Arg Asp Pro Arg Ala Ala Ile Gln Asn Gly Phe Trp Phe Phe Lys Phe Leu Ile Leu Val Gly Leu Thr Val Gly Ala Phe Tyr 140 Ile Pro Asp Gly Ser Phe Thr Asn Ile Trp Phe Tyr Phe Gly Val 155 Val Gly Ser Phe Leu Phe Ile Leu Ile Gln Leu Val Leu Leu Ile 170 Asp Phe Ala His Ser Trp Asn Gln Arg Trp Leu Gly Lys Ala Glu 185 Glu Cys Asp Ser Arg Ala Trp Tyr Ala Gly Leu Phe Phe Phe Thr Leu Leu Phe Tyr Leu Leu Ser Ile Ala Ala Val Ala Leu Met Phe 215 Met Tyr Tyr Thr Glu Pro Ser Gly Cys His Glu Gly Lys Val Phe 230 Ile Ser Leu Asn Leu Thr Phe Cys Val Cys Val Ser Ile Ala Ala 245 Val Leu Pro Lys Val Gln Asp Ala Gln Pro Asn Ser Gly Leu Leu 260 Gln Ala Ser Val Ile Thr Leu Tyr Thr Met Phe Val Thr Trp Ser 275 Ala Leu Ser Ser Ile Pro Glu Gln Lys Cys Asn Pro His Leu Pro 300 290 Thr Gln Leu Gly Asn Glu Thr Val Val Ala Gly Pro Glu Gly Tyr Glu Thr Gln Trp Trp Asp Ala Pro Ser Ile Val Gly Leu Ile Ile 320 Phe Leu Cys Thr Leu Phe Ile Ser Leu Arg Ser Ser Asp His 335 Arg Gln Val Asn Ser Leu Met Gln Thr Glu Glu Cys Pro Pro Met

<211> 18

350 355 360 Leu Asp Ala Thr Gln Gln Gln Gln Gln Val Ala Ala Cys Glu 365 Gly Arg Ala Phe Asp Asn Glu Gln Asp Gly Val Thr Tyr Ser Tyr 390 380 Ser Phe Phe His Phe Cys Leu Val Leu Ala Ser Leu His Val Met 395 Met Thr Leu Thr Asn Trp Tyr Lys Pro Gly Glu Thr Arg Lys Met 410 Ile Ser Thr Trp Thr Ala Val Trp Val Lys Ile Cys Ala Ser Trp 425 Ala Gly Leu Leu Tyr Leu Trp Thr Leu Val Ala Pro Leu Leu 440 Leu Arg Asn Arg Asp Phe Ser 455 <210> 20 <211> 24 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 20 gccgcctcat cttcacgttc ttcc 24 <210> 21 <211> 20 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 21 tcatccagct ggtgctgctc 20 <210> 22 <211> 20 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 22 cttcttccac ttctgcctgg 20 <210> 23

```
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 23
 cctgggcaaa aatgcaac 18
<210> 24
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 24
 caggaatgta gaaggcaccc acgg 24
<210> 25
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 25
 tggcacagat cttcacccac acgg 24
<210> 26
<211> 50
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 26
 tgtccatcat tatgctgagc ccgggcgtgg agagtcagct ctacaagctg 50
<210> 27
<211> 1351
<212> DNA
<213> Homo sapiens
<400> 27
 gagcgaggcc ggggactgaa ggtgtgggtg tcgagccctc tggcagaggg 50
 ttaacctggg tcaaatgcac ggattctcac ctcgtacagt tacgctctcc 100
 cgcggcacgt ccgcgaggac ttgaagtcct gagcgctcaa gtttgtccgt 150
 aggtcgagag aaggccatgg aggtgccgcc accggcaccg cggagctttc 200
 tctgtagagc attgtgccta tttccccgag tctttgctgc cgaagctgtg 250
```

actgccgatt cggaagtcct tgaggagcgt cagaagcggc ttccctacgt 300 cccagagccc tattacccgg aatctggatg ggaccgcctc cgggagctgt 350 ttggcaaaga tgaacagcag agaatttcaa aggaccttgc taatatctgt 400 aagacggcag ctacagcagg catcattggc tgggtgtatg ggggaatacc 450 agcttttatt catgctaaac aacaatacat tgagcagagc caggcagaaa 500 tttatcataa ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca 550 cgaggettca ttcgttatgg ctggcgctgg ggttggagaa ctgcagtgtt 600 tgtgactata ttcaacacag tgaacactag tctgaatgta taccgaaata 650 aagatgcctt aagccatttt gtaattgcag gagctgtcac gggaagtctt 700 tttaggataa acgtaggcct gcgtggcctg gtggctggtg gcataattgg 750 agcettgetg ggcacteetg taggaggeet getgatggea ttteagaagt 800 acgctggtga gactgttcag gaaagaaaac agaaggatcg aaaggcactc 850 catgagctaa aactggaaga gtggaaaggc agactacaag ttactgagca 900 cctccctgag aaaattgaaa gtagtttacg ggaagatgaa cctgagaatg 950 atgctaagaa aattgaagca ctgctaaacc ttcctagaaa cccttcagta 1000 atagataaac aagacaagga ctgaaagtgc tctgaacttg aaactcactg 1050 gagagetgaa gggagetgee atgteegatg aatgeeaaca gacaggeeac 1100 tetttggtca geetgetgac aaatttaagt getggtaeet gtggtggcag 1150 tggcttgctc ttgtcttttt cttttctttt taactaagaa tggggctgtt 1200 ttaatctatc aatatatgca tacatggata tatccaccca cctagatttt 1300 aagcagtaaa taaaacattt cgcaaaagat taaagttgaa ttttacagtt 1350

t 1351 <210> 28

<211> 285

<212> PRT

<213> Homo sapiens

<400> 28

Met Glu Val Pro Pro Pro Ala Pro Arg Ser Phe Leu Cys Arg Ala
1 5 10 15

Leu Cys Leu Phe Pro Arg Val Phe Ala Ala Glu Ala Val Thr Ala 20 25 30

Asp Ser Glu Val Leu Glu Glu Arg Gln Lys Arg Leu Pro Tyr Val Pro Glu Pro Tyr Tyr Pro Glu Ser Gly Trp Asp Arg Leu Arg Glu Leu Phe Gly Lys Asp Glu Gln Gln Arg Ile Ser Lys Asp Leu Ala Asn Ile Cys Lys Thr Ala Ala Thr Ala Gly Ile Ile Gly Trp Val Tyr Gly Gly Ile Pro Ala Phe Ile His Ala Lys Gln Gln Tyr Ile Glu Gln Ser Gln Ala Glu Ile Tyr His Asn Arg Phe Asp Ala Val 120 110 Gln Ser Ala His Arg Ala Ala Thr Arg Gly Phe Ile Arg Tyr Gly Trp Arg Trp Gly Trp Arg Thr Ala Val Phe Val Thr Ile Phe Asn 150 Thr Val Asn Thr Ser Leu Asn Val Tyr Arg Asn Lys Asp Ala Leu Ser His Phe Val Ile Ala Gly Ala Val Thr Gly Ser Leu Phe Arg 180 170 Ile Asn Val Gly Leu Arg Gly Leu Val Ala Gly Gly Ile Ile Gly Ala Leu Leu Gly Thr Pro Val Gly Gly Leu Leu Met Ala Phe Gln Lys Tyr Ala Gly Glu Thr Val Gln Glu Arg Lys Gln Lys Asp Arg Lys Ala Leu His Glu Leu Lys Leu Glu Glu Trp Lys Gly Arg Leu 235 Gln Val Thr Glu His Leu Pro Glu Lys Ile Glu Ser Ser Leu Arg Glu Asp Glu Pro Glu Asn Asp Ala Lys Lys Ile Glu Ala Leu Leu Asn Leu Pro Arg Asn Pro Ser Val Ile Asp Lys Gln Asp Lys Asp 285 280

<210> 29

<211> 324

<212> DNA

<213> Homo sapiens

<400> 29

cggaagtccc ttgaggagcg tcagaagcgg cttccctacg tcccagagcc 50

ctattacccg gaatctggat gggaccgctc cgggagctgt ttggcaaaga 100
tgaacagcag agaatttcaa aggaccttgc taatatctgt aagacggcag 150
ctacagcagg catcattggc tgggtgtatg ggggaatacc agcttttatt 200
catgctaaac aacaatacat tgagcagagc caggcagaaa tttatcataa 250
ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca cgaggcttca 300
ttcgttcatg gctggcgccg aacc 324

<210> 30

<211> 377

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 262, 330, 371

<223> unknown base

<400> 30

tcaagtttgt ccgtaggtcg agagaaggcc atggaggtgc cgccaccggc 50 accgcggagc ttttttctgt agagcattgt gcctatttcc ccgagttttt 100 gctgccgaag ctgtgactgc cgattcggaa gtccttgagg agcgtcagaa 150 gcggcttccc tacgtcccag agccctatta cccggaattt ggatgggacc 200 gcctccggga gctgtttggc aaagatgaac agcagagaat ttcaaaggac 250 cttgctgata tntgtaagac ggcagctaca gcaggcatca ttggctggt 300 gtatgggga ataccagctt ttattcatgn taaacaacaa tacattgagc 350 agagccaggc agaaatttat nataacc 377

<210> 31

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 31

tcgtacagtt acgctctccc 20

<210> 32

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

```
<400> 32
cttgaggagc gtcagaagcg 20
<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 33
ataacgaatg aagcctcgtg 20
<210> 34
<211> 40
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 34
 gctaatatct gtaagacggc agctacagca ggcatcattg 40
<210> 35
<211> 1819
<212> DNA
<213> Homo sapiens
<400> 35
 gagecgeege egegegege eegegeactg cageceeagg eeeeggeece 50
 ccacccacgt ctgcgttgct gccccgcctg ggccaggccc caaaggcaag 100
 gacaaagcag ctgtcaggga acctccgccg gagtcgaatt tacgtgcagc 150
 tgccggcaac cacaggttcc aagatggttt gcgggggctt cgcgtgttcc 200
 aagaactgcc tgtgcgccct caacctgctt tacaccttgg ttagtctgct 250
 gctaattgga attgctgcgt ggggcattgg cttcgggctg atttccagtc 300
 tccgagtggt cggcgtggtc attgcagtgg gcatcttctt gttcctgatt 350
 gctttagtgg gtctgattgg agctgtaaaa catcatcagg tgttgctatt 400
 tttttatatg attattctgt tacttgtatt tattgttcag ttttctgtat 450
 cttgcgcttg tttagccctg aaccaggagc aacagggtca gcttctggag 500
 gttggttgga acaatacggc aagtgctcga aatgacatcc agagaaatct 550
 aaactgctgt gggttccgaa gtgttaaccc aaatgacacc tgtctggcta 600
 gctgtgttaa aagtgaccac tcgtgctcgc catgtgctcc aatcatagga 650
 gaatatgctg gagaggtttt gagatttgtt ggtggcattg gcctgttctt 700
```

cagttttaca gagatcctgg gtgtttggct gacctacaga tacaggaacc 750 agaaagaccc ccgcgcgaat cctagtgcat tcctttgatg agaaaacaag 800 gaagatttcc tttcgtatta tgatcttgtt cactttctgt aattttctgt 850 taagctccat ttgccagttt aaggaaggaa acactatctg gaaaagtacc 900 ttattgatag tggaattata tatttttact ctatgtttct ctacatgttt 950 ttttctttcc gttgctgaaa aatatttgaa acttgtggtc tctgaagctc 1000 ggtggcacct ggaatttact gtattcattg tcgggcactg tccactgtgg 1050 cctttcttag catttttacc tgcagaaaaa ctttgtatgg taccactgtg 1100 ttggttatat ggtgaatctg aacgtacatc tcactggtat aattatatgt 1150 agcactgtgc tgtgtagata gttcctactg gaaaaagagt ggaaatttat 1200 taaaatcaga aagtatgaga tootgttatg ttaagggaaa tocaaattoo 1250 caattttttt tggtcttttt aggaaagatt gttgtggtaa aaagtgttag 1300 tataaaaatg ataatttact tgtagtcttt tatgattaca ccaatgtatt 1350 ctagaaatag ttatgtctta ggaaattgtg gtttaatttt tgacttttac 1400 aggtaagtgc aaaggagaag tggtttcatg aaatgttcta atgtataata 1450 acatttacct tcagcctcca tcagaatgga acgagttttg agtaatcagg 1500 aagtatatct atatgatctt gatattgttt tataataatt tgaagtctaa 1550 aagactgcat ttttaaacaa gttagtatta atgcgttggc ccacgtagca 1600 aaaagatatt tgattatctt aaaaattgtt aaataccgtt ttcatgaaat 1650 ttctcagtat tgtaacagca acttgtcaaa cctaagcata tttgaatatg 1700 atctcccata atttgaaatt gaaatcgtat tgtgtggctc tgtatattct 1750 gttaaaaaat taaaggacag aaacctttct ttgtgtatgc atgtttgaat 1800 taaaaqaaaq taatggaag 1819

```
<210> 36
```

<211> 204

<212> PRT

<213> Homo sapiens

<400> 36

Met Val Cys Gly Gly Phe Ala Cys Ser Lys Asn Cys Leu Cys Ala 1 5 10 15

Leu Asn Leu Leu Tyr Thr Leu Val Ser Leu Leu Leu Ile Gly Ile 20 25 30

```
Ala Ala Trp Gly Ile Gly Phe Gly Leu Ile Ser Ser Leu Arg Val
Val Gly Val Val Ile Ala Val Gly Ile Phe Leu Phe Leu Ile Ala
Leu Val Gly Leu Ile Gly Ala Val Lys His His Gln Val Leu Leu
Phe Phe Tyr Met Ile Ile Leu Leu Val Phe Ile Val Gln Phe
Ser Val Ser Cys Ala Cys Leu Ala Leu Asn Gln Glu Gln Gly
                                                        105
Gln Leu Leu Glu Val Gly Trp Asn Asn Thr Ala Ser Ala Arg Asn
                                                        120
                110
Asp Ile Gln Arg Asn Leu Asn Cys Cys Gly Phe Arg Ser Val Asn
                125
Pro Asn Asp Thr Cys Leu Ala Ser Cys Val Lys Ser Asp His Ser
                                                         150
                140
Cys Ser Pro Cys Ala Pro Ile Ile Gly Glu Tyr Ala Gly Glu Val
Leu Arg Phe Val Gly Gly Ile Gly Leu Phe Phe Ser Phe Thr Glu
                                                         180
                170
Ile Leu Gly Val Trp Leu Thr Tyr Arg Tyr Arg Asn Gln Lys Asp
                 185
```

Pro Arg Ala Asn Pro Ser Ala Phe Leu 200

<210> 37

<211> 390

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 20, 35, 61, 83, 106, 130, 133, 187, 232, 260, 336

<223> unknown base

<400> 37
 tgattggagc tgtaaaaaan tcttcaggtg ttgtnatttt tttatatgat 50
 tattctgtaa nttgtattta ttgttcagtt ttntgtatct tgcgcttgtt 100
 tagccntgaa ccaggagcaa cagggtcagn ttntggaggt tggttggaac 150
 aatacggcaa gtgctcgaaa tgacatccag agaaatntaa actgctgtgg 200
 gttccgaagt gttaacccaa atgacacctg tntggctagc tgtgttaaaa 250
 gtgaccactn gtgctcgcaa tgtgctccaa tcataggaga atatgctgga 300

```
gaggttttga gatttgttgg tggcattggc ctgttnttca gttttacaga 350
gatcctgggt gtttggctga cctacagata caggaaccag 390
<210> 38
<211> 566
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 27
<223> unknown base
<400> 38
 aatcccaaat tccccaattt ttttggnctt tttagggaaa gatgtgttgt 50
 ggtaaaaagt gttagtataa aaatgataat ttacttgtag tcttttatga 100
 ttacaccaat gtattctaga atagttatgt cttaggaaat tgtggtttaa 150
 tttttgactt ttacaggtaa gtgcaaagga gaagtggttt catgaaatgt 200
 tctaatgtat aataacattt accttcagcc tcccatcaga atggaacgag 250
 ttttgagtaa tccaggaagt atatctatat gatcttgata ttgttttata 300
 taatttgaag totaaaagac tgcattttta aacaagttag tattaatgcg 350
 ttggcccacg tagcaaaaag atatttgatt atcttaaaaa ttgttaaata 400
 ccgttttcat gaaagttctc agtattgtaa cagcaacttg tcaaacctaa 450
 gcatatttga atatgatctc ccataatttg aaattgaaat cgtattgtgt 500
 ggaggaaatg gcaatcttat gtgtgctgaa ggacacagta agagcaccaa 550
 gttgtgcccc acttgc 566
<210> 39
<211> 264
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 84-85, 206
<223> unknown base
 atgattattc tgttacttgt atttattgtt cagttttatg gtatcttgcg 50
 cttgtttagc ccctgaaacc aggagcaaca gggnncagct tcctggaggt 100
 tggttggcaa caatcacggc caagtgactc cgcaaatgac atcccagaga 150
 aatectaaac tgetgtgggt teegaagtgt taacccaaat gacacetgte 200
```

```
tggctngctg tgttaaaagt gaccactcgt gctcgccatg tgctccaatc 250
 ataggagaat atgc 264
<210> 40
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 40
 acccacgtct gcgttgctgc c 21
<210> 41
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 41
 gagaatatgc tggagagg 18
<210> 42
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 42
 aggaatgcac taggattcgc gcgg 24
<210> 43
<211> 45
 <212> DNA
 <213> Artificial Sequence
<220>
 <223> Synthetic oligonucleotide probe
 <400> 43
 ggccccaaag gcaaggacaa agcagctgtc agggaacctc cgccg 45
 <210> 44
 <211> 2061
 <212> DNA
 <213> Homo sapiens
 <400> 44
  cagtcaccat gaagctgggc tgtgtcctca tggcctgggc cctctacctt 50
  tecettggtg tgetetgggt ggeceagatg ctaetggetg ceagttttga 100
```

gacgctgcag tgtgagggac ctgtctgcac tgaggagagc agctgccaca 150 cggaggatga cttgactgat gcaagggaag ctggcttcca ggtcaaggcc 200 tacactttca gtgaaccett ccacctgatt gtgtcctatg actggctgat 250 cctccaaggt ccagccaagc cagtttttga aggggacctg ctggttctgc 300 gctgccaggc ctggcaagac tggccactga ctcaggtgac cttctaccga 350 gatggctcag ctctgggtcc ccccgggcct aacagggaat tctccatcac 400 cgtggtacaa aaggcagaca gcgggcacta ccactgcagt ggcatcttcc 450 agagecetgg teetgggate ecagaaacag catetgttgt ggetateaca 500 gtccaagaac tgtttccagc gccaattctc agagctgtac cctcagctga 550 accccaagca ggaagcccca tgaccctgag ttgtcagaca aagttgcccc 600 tgcagaggtc agctgcccgc ctcctcttct ccttctacaa ggatggaagg 650 atagtgcaaa gcagggggct ctcctcagaa ttccagatcc ccacagcttc 700 agaagatcac teegggteat aetggtgtga ggeageeact gaggaeaace 750 aagtttggaa acagagcccc cagctagaga tcagagtgca gggtgcttcc 800 agetetgetg caceteccae attgaateca geteetcaga aatcagetge 850 tccaggaact gctcctgagg aggcccctgg gcctctgcct ccgccgccaa 900 ccccatcttc tgaggatcca ggcttttctt ctcctctggg gatgccagat 950 cctcatctgt atcaccagat gggccttctt ctcaaacaca tgcaggatgt 1000 gagagteete eteggteace tgeteatgga gttgagggaa ttatetggee 1050 accagaagcc tgggaccaca aaggctactg ctgaatagaa gtaaacagtt 1100 catccatgat ctcacttaac caccccaata aatctgattc tttattttct 1150 cttcctgtcc tgcacatatg cataagtact tttacaagtt gtcccagtgt 1200 agaattagag tttagctata attgtgtatt ctctcttaac acaacagaat 1300 tctgctgtct agatcaggaa tttctatctg ttatatcgac cagaatgttg 1350 tgatttaaag agaactaatg gaagtggatt gaatacagca gtctcaactg 1400 ggggcaattt tgcccccag aggacattgg gcaatgtttg gagacatttt 1450 ggtcattata cttggggggt tgggggatgg tgggatgtgt gtctactggc 1500 atccagtaaa tagaagccag gggtgccgct aaacatccta taatgcacag 1550 ggcagtacce cacaacgaaa aataatetgg cccaaaatgt cagttgtact 1600 gagtttgaga aaccecagce taatgaaacc ctaggtgttg ggctctggaa 1650 tgggactttg tecettctaa ttattatete tttecageet cattcageta 1700 ttettactga cataccagte tttagetggt getatggtet gttetttagt 1750 tetagtttgt atcecetcaa aagceattat gttgaaatee taatecceaa 1800 ggtgatggea ttaagaagtg ggcetttggg aagtgattag atcaggagtg 1850 cagageeete atgattagga ttagtgeeet tatttaaaaa ggeeecagag 1900 agetaactea ecettecace atatgaggae gtggcaagaa gatgacatgt 1950 atgagaacca aaaaacaget gtegeeaaac accgaetetg tegttgeett 2000 gatettgaac ttecageete cagaactatg agaaataaaa ttetggttgt 2050 ttgtageeta a 2061

<210> 45

<211> 359

<212> PRT

<213> Homo sapiens

 Adob Lys
 Leu Gly Cys
 Val Leu Met Ala Trp 10
 Ala Leu Tyr Leu Ser 15

 Leu Gly Val Leu Trp 20
 Val Ala Gln Met Leu Leu Leu Ala Ala Ser Phe 25

 Glu Thr Leu Gln Cys 35
 Glu Gly Pro Val Cys Thr Glu Glu Ser Ser 40

 Cys His Thr Glu Asp 50
 Asp Leu Thr Asp Ala Arg Glu Ala Gly Phe 55

 Gln Val Lys Ala Tyr Thr Phe Ser Glu Pro Phe His Leu Ile Val 75

 Ser Tyr Asp Trp Leu 11e Leu Gln Gly Pro 85
 Ala Lys Pro Val Phe 85

 Glu Gly Asp Leu Leu Val Leu Arg Cys Gln Ala Trp Gln Asp Trp 100

 Pro Leu Thr Gln Val 110
 Thr Phe Tyr Arg Asp 115

 Pro Pro Gly Pro Asn Arg Glu Phe Ser Ile Thr Val Val Gln Lys 135

 Ala Asp Ser Gly His Tyr His Cys Ser Gly Ile Phe Gln Ser Pro 150

```
Gly Pro Gly Ile Pro Glu Thr Ala Ser Val Val Ala Ile Thr Val
Gln Glu Leu Phe Pro Ala Pro Ile Leu Arg Ala Val Pro Ser Ala
                                    175
                170
Glu Pro Gln Ala Gly Ser Pro Met Thr Leu Ser Cys Gln Thr Lys
Leu Pro Leu Gln Arg Ser Ala Ala Arg Leu Leu Phe Ser Phe Tyr
                                     205
                200
Lys Asp Gly Arg Ile Val Gln Ser Arg Gly Leu Ser Ser Glu Phe
Gln Ile Pro Thr Ala Ser Glu Asp His Ser Gly Ser Tyr Trp Cys
                230
Glu Ala Ala Thr Glu Asp Asn Gln Val Trp Lys Gln Ser Pro Gln
Leu Glu Ile Arg Val Gln Gly Ala Ser Ser Ser Ala Ala Pro Pro
                 260
Thr Leu Asn Pro Ala Pro Gln Lys Ser Ala Ala Pro Gly Thr Ala
Pro Glu Glu Ala Pro Gly Pro Leu Pro Pro Pro Pro Thr Pro Ser
                 290
Ser Glu Asp Pro Gly Phe Ser Ser Pro Leu Gly Met Pro Asp Pro
                 305
His Leu Tyr His Gln Met Gly Leu Leu Leu Lys His Met Gln Asp
                 320
Val Arg Val Leu Leu Gly His Leu Leu Met Glu Leu Arg Glu Leu
                 335
 Ser Gly His Gln Lys Pro Gly Thr Thr Lys Ala Thr Ala Glu
                 350
<210> 46
<211> 18
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 46
 tgggctgtgt cctcatgg 18
<210> 47
<211> 18
<212> DNA
```

<213> Artificial Sequence

```
<220>
<223> Synthetic oligonucleotide probe
<400> 47
 tttccagcgc caattctc 18
<210> 48
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 48
 agttcttgga ctgtgatagc cac 23
<210> 49
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 49
 aaacttggtt gtcctcagtg gctg 24
<210> 50
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 50
 gtgagggacc tgtctgcact gaggagagca gctgccacac ggagg 45
<210> 51
<211> 2181
<212> DNA
<213> Homo sapiens
<400> 51
 cccacgcgtc cgcccacgcg tccgcccacg ggtccgccca cgcgtccggg 50
 ccaccagaag tttgagcctc tttggtagca ggaggctgga agaaaggaca 100
 gaagtagete tggetgtgat ggggatetta etgggeetge taeteetggg 150
 gcacctaaca gtggacactt atggccgtcc catcctggaa gtgccagaga 200
 gtgtaacagg accttggaaa ggggatgtga atcttccctg cacctatgac 250
  cccctgcaag gctacaccca agtcttggtg aagtggctgg tacaacgtgg 300
  ctcagaccct gtcaccatct ttctacgtga ctcttctgga gaccatatcc 350
```

agcaggcaaa gtaccagggc cgcctgcatg tgagccacaa ggttccagga 400 gatgtatccc tccaattgag caccetggag atggatgacc ggagecacta 450 cacgtgtgaa gtcacctggc agactcctga tggcaaccaa gtcgtgagag 500 ataagattac tgagctccgt gtccagaaac tctctgtctc caagcccaca 550 gtgacaactg gcagcggtta tggcttcacg gtgccccagg gaatgaggat 600 tageetteaa tgeeaggete ggggttetee teecateagt tatatttggt 650 ataagcaaca gactaataac caggaaccca tcaaagtagc aaccctaagt 700 accttactct tcaagcctgc ggtgatagcc gactcaggct cctatttctg 750 cactgccaag ggccaggttg gctctgagca gcacagcgac attgtgaagt 800 ttgtggtcaa agactcctca aagctactca agaccaagac tgaggcacct 850 acaaccatga catacccctt gaaagcaaca tctacagtga agcagtcctg 900 ggactggacc actgacatgg atggctacct tggagagacc agtgctgggc 950 caggaaagag cctgcctgtc tttgccatca tcctcatcat ctccttgtgc 1000 tgtatggtgg tttttaccat ggcctatatc atgctctgtc ggaagacatc 1050 ccaacaagag catgtctacg aagcagccag gtaagaaagt ctctcctctt 1100 ccatttttga ccccgtccct gccctcaatt ttgattactg gcaggaaatg 1150 tggaggaagg ggggtgtggc acagacccaa tcctaaggcc ggaggccttc 1200 agggtcagga catagctgcc ttccctctct caggcacctt ctgaggttgt 1250 tttggccctc tgaacacaaa ggataattta gatccatctg ccttctgctt 1300 ccagaatccc tgggtggtag gatcctgata attaattggc aagaattgag 1350 gcagaagggt gggaaaccag gaccacagcc ccaagtccct tcttatgggt 1400 ggtgggctct tgggccatag ggcacatgcc agagaggcca acgactctgg 1450 agaaaccatg agggtggcca tcttcgcaag tggctgctcc agtgatgagc 1500 caacttccca gaatctgggc aacaactact ctgatgagcc ctgcatagga 1550 caggagtacc agatcatcgc ccagatcaat ggcaactacg cccgcctgct 1600 ggacacagtt cctctggatt atgagtttct ggccactgag ggcaaaagtg 1650 tctgttaaaa atgccccatt aggccaggat ctgctgacat aattgcctag 1700 tcagtccttg ccttctgcat ggccttcttc cctgctacct ctcttcctgg 1750 atagcccaaa gtgtccgcct accaacactg gagccgctgg gagtcactgg 1800 ctttgccctg gaatttgcca gatgcatctc aagtaagcca gctgctggat 1850
ttggctctgg gcccttctag tatctctgcc gggggcttct ggtactcctc 1900
tctaaatacc agagggaaga tgcccatagc actaggactt ggtcatcatg 1950
cctacagaca ctattcaact ttggcatctt gccaccagaa gacccgaggg 2000
aggctcagct ctgccagctc agaggaccag ctatatccag gatcatttct 2050
ctttcttcag ggccagacag cttttaattg aaattgttat ttcacaggcc 2100
agggttcagt tctgctcctc cactataagt ctaatgttct gactctccc 2150
tggtgctcaa taaatatcta atcataacag c 2181

<210> 52 <211> 321 <212> PRT <213> Homo sapiens

Gly Ser Asp Pro Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp
65 70 75

His Ile Gln Gln Ala Lys Tyr Gln Gly Arg Leu His Val Ser His 80 85 90

Lys Val Pro Gly Asp Val Ser Leu Gln Leu Ser Thr Leu Glu Met 95 100 105

Asp Asp Arg Ser His Tyr Thr Cys Glu Val Thr Trp Gln Thr Pro 110 115 120

Asp Gly Asn Gln Val Val Arg Asp Lys Ile Thr Glu Leu Arg Val 125 130 135

Gln Lys Leu Ser Val Ser Lys Pro Thr Val Thr Thr Gly Ser Gly
140 145 150

Tyr Gly Phe Thr Val Pro Gln Gly Met Arg Ile Ser Leu Gln Cys 155 160 165

Gln Ala Arg Gly Ser Pro Pro Ile Ser Tyr Ile Trp Tyr Lys Gln 170 175 180

```
Gln Thr Asn Asn Gln Glu Pro Ile Lys Val Ala Thr Leu Ser Thr
                 185
 Leu Leu Phe Lys Pro Ala Val Ile Ala Asp Ser Gly Ser Tyr Phe
                                     205
 Cys Thr Ala Lys Gly Gln Val Gly Ser Glu Gln His Ser Asp Ile
                 215
                                     220
 Val Lys Phe Val Val Lys Asp Ser Ser Lys Leu Leu Lys Thr Lys
                 230
                                      235
 Thr Glu Ala Pro Thr Thr Met Thr Tyr Pro Leu Lys Ala Thr Ser
                 245
                                     250
 Thr Val Lys Gln Ser Trp Asp Trp Thr Thr Asp Met Asp Gly Tyr
 Leu Gly Glu Thr Ser Ala Gly Pro Gly Lys Ser Leu Pro Val Phe
Ala Ile Ile Leu Ile Ile Ser Leu Cys Cys Met Val Val Phe Thr
                 290
Met Ala Tyr Ile Met Leu Cys Arg Lys Thr Ser Gln Glu His
                                     310
Val Tyr Glu Ala Ala Arg
                 320
<210> 53
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 53
tatccctcca attgagcacc ctgg 24
<210> 54
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 54
gtcggaagac atcccaacaa g 21
<210> 55
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
```

```
<223> Synthetic oligonucleotide probe
<400> 55
cttcacaatg tcgctgtgct gctc 24
<210> 56
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 56
agccaaatcc agcagctggc ttac 24
<210> 57
<211> 50
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 57
tggatgaccg gagccactac acgtgtgaag tcacctggca gactcctgat 50
<210> 58
<211> 2458
<212> DNA
<213> Homo sapiens
<400> 58
 gcgccgggag cccatctgcc cccaggggca cggggcgcgg ggccggctcc 50
 cgcccggcac atggctgcag ccacctcgcg cgcaccccga ggcgccgcgc 100
 ccagctcgcc cgaggtccgt cggaggcgcc cggccgcccc ggagccaagc 150
 agcaactgag cggggaagcg cccgcgtccg gggatcggga tgtccctcct 200
 ccttctcctc ttgctagttt cctactatgt tggaaccttg gggactcaca 250
 ctgagatcaa gagagtggca gaggaaaagg tcactttgcc ctgccaccat 300
 caactggggc ttccagaaaa agacactctg gatattgaat ggctgctcac 350
 cgataatgaa gggaaccaaa aagtggtgat cacttactcc agtcgtcatg 400
 tctacaataa cttgactgag gaacagaagg gccgagtggc ctttgcttcc 450
 aatttcctgg caggagatgc ctccttgcag attgaacctc tgaagcccag 500
 tgatgagggc cggtacacct gtaaggttaa gaattcaggg cgctacgtgt 550
 ggagccatgt catcttaaaa gtcttagtga gaccatccaa gcccaagtgt 600
 gagttggaag gagagetgae agaaggaagt gacetgaett tgeagtgtga 650
```

gtcatcctct ggcacagagc ccattgtgta ttactggcag cgaatccgag 700 agaaagaggg agaggatgaa cgtctgcctc ccaaatctag gattgactac 750 aaccaccctg gacgagttct gctgcagaat cttaccatgt cctactctgg 800 actgtaccag tgcacagcag gcaacgaagc tgggaaggaa agctgtgtgg 850 tgcgagtaac tgtacagtat gtacaaagca tcggcatggt tgcaggagca 900 gtgacaggca tagtggctgg agccctgctg attttcctct tggtgtggct 950 gctaatccga aggaaagaca aagaaagata tgaggaagaa gagagaccta 1000 atgaaattcg agaagatgct gaagctccaa aagcccgtct tgtgaaaccc 1050 ageteetett ceteaggete teggagetea egetetggtt etteeteeae 1100 tegetecaea geaaatagtg ceteaegeag eeageggaca etgteaaetg 1150 acgcagcacc ccagccaggg ctggccaccc aggcatacag cctagtgggg 1200 ccagaggtga gaggttctga accaaagaaa gtccaccatg ctaatctgac 1250 caaagcagaa accacacca gcatgatccc cagccagagc agagccttcc 1300 aaacggtctg aattacaatg gacttgactc ccacgctttc ctaggagtca 1350 gggtctttgg actcttctcg tcattggagc tcaagtcacc agccacacaa 1400 ccagatgaga ggtcatctaa gtagcagtga gcattgcacg gaacagattc 1450 agatgagcat tttccttata caataccaaa caagcaaaag gatgtaagct 1500 gattcatctg taaaaaggca tcttattgtg cctttagacc agagtaaggg 1550 aaagcaggag tccaaatcta tttgttgacc aggacctgtg gtgagaaggt 1600 tggggaaagg tgaggtgaat atacctaaaa cttttaatgt gggatatttt 1650 gtatcagtgc tttgattcac aattttcaag aggaaatggg atgctgtttg 1700 taaattttct atgcatttct gcaaacttat tggattatta gttattcaga 1750 cagtcaagca gaacccacag ccttattaca cctgtctaca ccatgtactg 1800 agctaaccac ttctaagaaa ctccaaaaaa ggaaacatgt gtcttctatt 1850 ctgacttaac ttcatttgtc ataaggtttg gatattaatt tcaaggggag 1900 ttgaaatagt gggagatgga gaagagtgaa tgagtttctc ccactctata 1950 ctaatctcac tatttgtatt gagcccaaaa taactatgaa aggagacaaa 2000 aatttgtgac aaaggattgt gaagagcttt ccatcttcat gatgttatga 2050 ggattgttga caaacattag aaatatataa tggagcaatt gtggatttcc 2100

cotcaaatca gatgootota aggacttoo tgotagatat ttotggaagg 2150 agaaaataca acatgtoatt tatoaacgto ottagaaaga attottotag 2200 agaaaaaaggg atotaggaat gotgaaagat taccoaacat accattatag 2250 tototototto otgagaaaat gtgaaaccag aattgoaaga otgggtggac 2300 tagaaaggga gattagatca gttttotott aatatgtoaa ggaaggtago 2350 ogggoatggt gocaggoaco tgtaggaaaa tocagoaggt ggaggttgoa 2400 gtgagoogag attatgoota tgoactooag ootgggtga agagoggac 2450 tocgtoto 2458

<210> 59 <211> 373 <212> PRT <213> Homo sapiens

<400> 59

Met Ser Leu Leu Leu Leu Leu Leu Val Ser Tyr Tyr Val Gly 1 5 10 15

Thr Leu Gly Thr His Thr Glu Ile Lys Arg Val Ala Glu Glu Lys 20 25 30

Val Thr Leu Pro Cys His His Gln Leu Gly Leu Pro Glu Lys Asp 35 40 45

Thr Leu Asp Ile Glu Trp Leu Leu Thr Asp Asn Glu Gly Asn Gln
50 55 60

Lys Val Val Ile Thr Tyr Ser Ser Arg His Val Tyr Asn Asn Leu 65 70 75

Thr Glu Glu Gln Lys Gly Arg Val Ala Phe Ala Ser Asn Phe Leu 80 85 90

Ala Gly Asp Ala Ser Leu Gln Ile Glu Pro Leu Lys Pro Ser Asp 95 100 105

Glu Gly Arg Tyr Thr Cys Lys Val Lys Asn Ser Gly Arg Tyr Val 110 115 120

Trp Ser His Val Ile Leu Lys Val Leu Val Arg Pro Ser Lys Pro 125 130 135

Lys Cys Glu Leu Glu Gly Glu Leu Thr Glu Gly Ser Asp Leu Thr
140 145 150

Leu Gln Cys Glu Ser Ser Ser Gly Thr Glu Pro Ile Val Tyr Tyr
155 160 165

Trp Gln Arg Ile Arg Glu Lys Glu Gly Glu Asp Glu Arg Leu Pro 170 175 180

<211> 24 <212> DNA

<213> Artificial Sequence

<223> Synthetic oligonucleotide probe

```
Pro Lys Ser Arg Ile Asp Tyr Asn His Pro Gly Arg Val Leu Leu
Gln Asn Leu Thr Met Ser Tyr Ser Gly Leu Tyr Gln Cys Thr Ala
                                     205
                 200
Gly Asn Glu Ala Gly Lys Glu Ser Cys Val Val Arg Val Thr Val
                                     220
Gln Tyr Val Gln Ser Ile Gly Met Val Ala Gly Ala Val Thr Gly
                                     235
Ile Val Ala Gly Ala Leu Leu Ile Phe Leu Leu Val Trp Leu Leu
Ile Arg Arg Lys Asp Lys Glu Arg Tyr Glu Glu Glu Glu Arg Pro
Asn Glu Ile Arg Glu Asp Ala Glu Ala Pro Lys Ala Arg Leu Val
                 275
Lys Pro Ser Ser Ser Ser Gly Ser Arg Ser Ser Arg Ser Gly
                 290
Ser Ser Ser Thr Arg Ser Thr Ala Asn Ser Ala Ser Arg Ser Gln
                 305
                                     310
Arg Thr Leu Ser Thr Asp Ala Ala Pro Gln Pro Gly Leu Ala Thr
                 320
Gln Ala Tyr Ser Leu Val Gly Pro Glu Val Arg Gly Ser Glu Pro
Lys Lys Val His His Ala Asn Leu Thr Lys Ala Glu Thr Thr Pro
                 350
 Ser Met Ile Pro Ser Gln Ser Arg Ala Phe Gln Thr Val
                 365
<210> 60
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 60
ccagtgcaca gcaggcaacg aagc 24
<210> 61
```

```
<400> 61
 actaggctgt atgcctgggt gggc 24
<210> 62
<211> 43
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 62
 gtatgtacaa agcatcggca tggttgcagg agcagtgaca ggc 43
<210> 63
<211> 3534
<212> DNA
<213> Homo sapiens
<400> 63
 gtcgttcctt tgctctctcg cgcccagtcc tcctccctgg ttctcctcag 50
 ccqctqtcqq aggagagcac ccggagacgc gggctgcagt cgcggcggct 100
 teteceegee tgggeggeet egeegetggg eaggtgetga gegeecetag 150
 agectecett geogeeteee teetetgeee ggeogeagea gtgcacatgg 200
 ggtgttggag gtagatgggc tcccggcccg ggaggcggcg gtggatgcgg 250
 cgctgggcag aagcagccgc cgattccagc tgccccgcgc gccccgggcg 300
 cccctgcgag tccccggttc agccatgggg acctctccga gcagcagcac 350
 cqccctcqcc tcctgcagcc gcatcgcccg ccgagccaca gccacgatga 400
 tegeggete cetteteetg ettggattee ttageaceae caeageteag 450
 ccagaacaga aggcctcgaa tctcattggc acataccgcc atgttgaccg 500
 tgccaccggc caggtgctaa cctgtgacaa gtgtccagca ggaacctatg 550
 tctctgagca ttgtaccaac acaagcctgc gcgtctgcag cagttgccct 600
 gtggggacct ttaccaggca tgagaatggc atagagaaat gccatgactg 650
 tagtcagcca tgcccatggc caatgattga gaaattacct tgtgctgcct 700
 tgactgaccg agaatgcact tgcccacctg gcatgttcca gtctaacgct 750
 acctgtgccc cccatacggt gtgtcctgtg ggttggggtg tgcggaagaa 800
 agggacagag actgaggatg tgcggtgtaa gcagtgtgct cggggtacct 850
 tctcagatgt gccttctagt gtgatgaaat gcaaagcata cacagactgt 900
```

ctgagtcaga acctggtggt gatcaagccg gggaccaagg agacagacaa 950

cgtctgtggc acactcccgt ccttctccag ctccacctca ccttcccctg 1000 gcacagccat ctttccacgc cctgagcaca tggaaaccca tgaagtccct 1050 tcctccactt atgttcccaa aggcatgaac tcaacagaat ccaactcttc 1100 tgcctctgtt agaccaaagg tactgagtag catccaggaa gggacagtcc 1150 ctgacaacac aagctcagca agggggaagg aagacgtgaa caagaccctc 1200 ccaaaccttc aggtagtcaa ccaccagcaa ggcccccacc acagacacat 1250 cctgaagctg ctgccgtcca tggaggccac tgggggcgag aagtccagca 1300 cgcccatcaa gggccccaag aggggacatc ctagacagaa cctacacaag 1350 cattttgaca tcaatgagca tttgccctgg atgattgtgc ttttcctgct 1400 gctggtgctt gtggtgattg tggtgtgcag tatccggaaa agctcgagga 1450 ctctgaaaaa ggggccccgg caggatccca gtgccattgt ggaaaaggca 1500 gggctgaaga aatccatgac tccaacccag aaccgggaga aatggatcta 1550 ctactgcaat ggccatggta tcgatatcct gaagcttgta gcagcccaag 1600 tqqqaaqcca qtgqaaagat atctatcagt ttctttqcaa tgccagtgag 1650 agggaggttg ctgctttctc caatgggtac acagccgacc acgagcgggc 1700 ctacgcagct ctgcagcact ggaccatccg gggccccgag gccagcctcg 1750 cccagctaat tagcgccctg cgccagcacc ggagaaacga tgttgtggag 1800 aagattcgtg ggctgatgga agacaccacc cagctggaaa ctgacaaact 1850 ageteteceg atgagececa geeegettag eeegageeee ateceeagee 1900 ccaacgcgaa acttgagaat tccgctctcc tgacggtgga gccttcccca 1950 caggacaaga acaagggctt cttcgtggat gagtcggagc cccttctccg 2000 ctgtgactct acatccagcg gctcctccgc gctgagcagg aacggttcct 2050 ttattaccaa agaaaagaag gacacagtgt tgcggcaggt acgcctggac 2100 ccctgtgact tgcagcctat ctttgatgac atgctccact ttctaaatcc 2150 tgaggagctg cgggtgattg aagagattcc ccaggctgag gacaaactag 2200 accggctatt cgaaattatt ggagtcaaga gccaggaagc cagccagacc 2250 ctcctggact ctgtttatag ccatcttcct gacctgctgt agaacatagg 2300 gatactgcat tctggaaatt actcaattta gtggcagggt ggttttttaa 2350 ttttcttctg tttctgattt ttgttgtttg gggtgtgtgt gtgtgtttgt 2400

gtgtgtgtg gtgtgtgt gtgtgtgtgt gtttaacaga gaatatggcc 2450 agtgcttgag ttctttctcc ttctctctct ctctttttt tttaaataac 2500 tcttctggga agttggttta taagcctttg ccaggtgtaa ctgttgtgaa 2550 atacccacca ctaaagtttt ttaagttcca tattttctcc attttgcctt 2600 cttatgtatt ttcaagatta ttctgtgcac tttaaattta cttaacttac 2650 cataaatgca gtgtgacttt tcccacacac tggattgtga ggctcttaac 2700 ttcttaaaag tataatggca tcttgtgaat cctataagca gtctttatgt 2750 ctcttaacat tcacacctac tttttaaaaa caaatattat tactattttt 2800 attattgttt gtcctttata aattttctta aagattaaga aaatttaaga 2850 ccccattgag ttactgtaat gcaattcaac tttgagttat cttttaaata 2900 tgtcttgtat agttcatatt catggctgaa acttgaccac actattgctg 2950 attgtatggt tttcacctgg acaccgtgta gaatgcttga ttacttgtac 3000 tottottatg ctaatatgct ctgggctgga gaaatgaaat cctcaagcca 3050 tcaggatttg ctatttaagt ggcttgacaa ctgggccacc aaagaacttg 3100 aacttcacct tttaggattt gagctgttct ggaacacatt gctgcacttt 3150 ggaaagtcaa aatcaagtgc cagtggcgcc ctttccatag agaatttgcc 3200 cagctttgct ttaaaagatg tcttgttttt tatatacaca taatcaatag 3250 qtccaatctq ctctcaaqqc cttqqtcctq gtgggattcc ttcaccaatt 3300 actttaatta aaaatqqctq caactqtaag aacccttgtc tgatatattt 3350 gcaactatgc teccatttac aaatgtacet tetaatgete agttgecagg 3400 ttccaatqca aaggtggcgt ggactccctt tgtgtgggtg gggtttgtgg 3450 gtagtggtga aggaccgata tcagaaaaat gccttcaagt gtactaattt 3500 attaataaac attaggtgtt tgttaaaaaa aaaa 3534

<210> 64

<211> 655

<212> PRT

<213> Homo sapiens

<400> 64

Met Gly Thr Ser Pro Ser Ser Ser Thr Ala Leu Ala Ser Cys Ser 1 5 10 15

Arg Ile Ala Arg Arg Ala Thr Ala Thr Met Ile Ala Gly Ser Leu
20 25 30

Leu Leu Gly Phe Leu Ser Thr Thr Thr Ala Gln Pro Glu Gln Lys Ala Ser Asn Leu Ile Gly Thr Tyr Arg His Val Asp Arg Ala Thr Gly Gln Val Leu Thr Cys Asp Lys Cys Pro Ala Gly Thr Tyr Val Ser Glu His Cys Thr Asn Thr Ser Leu Arg Val Cys Ser Ser Cys Pro Val Gly Thr Phe Thr Arg His Glu Asn Gly Ile Glu Lys Cys His Asp Cys Ser Gln Pro Cys Pro Trp Pro Met Ile Glu Lys 110 Leu Pro Cys Ala Ala Leu Thr Asp Arg Glu Cys Thr Cys Pro Pro 125 Gly Met Phe Gln Ser Asn Ala Thr Cys Ala Pro His Thr Val Cys Pro Val Gly Trp Gly Val Arg Lys Lys Gly Thr Glu Thr Glu Asp Val Arg Cys Lys Gln Cys Ala Arg Gly Thr Phe Ser Asp Val Pro 170 Ser Ser Val Met Lys Cys Lys Ala Tyr Thr Asp Cys Leu Ser Gln Asn Leu Val Val Ile Lys Pro Gly Thr Lys Glu Thr Asp Asn Val 200 Cys Gly Thr Leu Pro Ser Phe Ser Ser Ser Thr Ser Pro Ser Pro Gly Thr Ala Ile Phe Pro Arg Pro Glu His Met Glu Thr His Glu 230 Val Pro Ser Ser Thr Tyr Val Pro Lys Gly Met Asn Ser Thr Glu Ser Asn Ser Ser Ala Ser Val Arg Pro Lys Val Leu Ser Ser Ile 270 260 Gln Glu Gly Thr Val Pro Asp Asn Thr Ser Ser Ala Arg Gly Lys 275 Glu Asp Val Asn Lys Thr Leu Pro Asn Leu Gln Val Val Asn His 290 Gln Gln Gly Pro His His Arg His Ile Leu Lys Leu Pro Ser Met Glu Ala Thr Gly Gly Glu Lys Ser Ser Thr Pro Ile Lys Gly

				320					325					330
Pro	Lys	Arg	Gly	His 335	Pro	Arg	Gln	Asn	Leu 340	His	Lys	His	Phe	Asp 345
Ile	Asn	Glu	His	Leu 350	Pro	Trp	Met	Ile	Val 355	Leu	Phe	Leu	Leu	Leu 360
Val	Leu	Val	Val	Ile 365	Val	Val	Cys	Ser	Ile 370	Arg	Lys	Ser	Ser	Arg 375
Thr	Leu	Lys	Lys	Gly 380	Pro	Arg	Gln	Asp	Pro 385	Ser	Ala	Ile	Val	Glu 390
Lys	Ala	Gly	Leu	Lys 395	Lys	Ser	Met	Thr	Pro 400	Thr	Gln	Asn	Arg	Glu 405
Lys	Trp	Ile	Tyr	Tyr 410	Cys	Asn	Gly	His	Gly 415	Ile	Asp	Ile	Leu	Lys 420
Leu	Val	Ala	Ala	Gln 425	Val	Gly	Ser	Gln	Trp 430	Lys	Asp	Ile	Tyr	Gln 435
Phe	Leu	Суз	Asn	Ala 440	Ser	Glu	Arg	Glu	Val 445	Ala	Ala	Phe	Ser	Asn 450
Gly	Tyr	Thr	Ala	Asp 455	His	Glu	Arg	Ala	Tyr 460	Ala	Ala	Leu	Gln	His 465
Trp	Thr	Ile	Arg	Gly 470	Pro	Glu	Ala	Ser	Leu 475	Ala	Gln	Leu	Ile	Ser 480
Ala	Leu	Arg	Gln	His 485	Arg	Arg	Asn	Asp	Val 490	Val	Glu	Lys	Ile	Arg 495
Gly	Leu	Met	Glu	Asp 500	Thr	Thr	Gln	Leu	Glu 505	Thr	Asp	Lys	Leu	Ala 510
Leu	Pro	Met	Ser	Pro 515	Ser	Pro	Leu	Ser	Pro 520	Ser	Pro	Ile	Pro	Ser 525
Pro	Asn	Ala	Lys	Leu 530	Glu	Asn	Ser	Ala	Leu 535	Leu	Thr	Val	Glu	Pro 540
Ser	Pro	Gln	Asp	Lys 545	Asn	Lys	Gly	Phe	Phe 550	Val	Asp	Glu	Ser	Glu 555
Pro	Leu	Leu	Arg	Cys 560	Asp	Ser	Thr	Ser	Ser 565	Gly	Ser	Ser	Ala	Leu 570
Ser	Arg	Asn	Gly	Ser 575	Phe	Ile	Thr	Lys	Glu 580	Lys	Lys	Asp	Thr	Val 585
				Arg 590					595					600
Asp	Asp	Met	Leu	His 605	Phe	Leu	Asn	Pro	Glu 610	Glu	Leu	Arg	Val	Ile 615

```
Glu Glu Ile Pro Gln Ala Glu Asp Lys Leu Asp Arg Leu Phe Glu
                 620
 Ile Ile Gly Val Lys Ser Gln Glu Ala Ser Gln Thr Leu Leu Asp
                                      640
                 635
 Ser Val Tyr Ser His Leu Pro Asp Leu Leu
<210> 65
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 65
 gtagcagtgc acatggggtg ttgg 24
<210> 66
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 66
 accgcacatc ctcagtctct gtcc 24
<210> 67
<211> 50
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
 acgatgateg egggeteect teteetgett ggatteetta geaceaceae 50
<210> 68
<211> 2412
<212> DNA
<213> Homo sapiens
<400> 68
 atgggaagcc agtaacactg tggcctacta tctcttccgt ggtgccatct 50
 acatttttgg gactcgggaa ttatgaggta gaggtggagg cggagccgga 100
 tgtcagaggt cctgaaatag tcaccatggg ggaaaatgat ccgcctgctg 150
 ttgaagcccc cttctcattc cgatcgcttt ttggccttga tgatttgaaa 200
 ataagtcctg ttgcaccaga tgcagatgct gttgctgcac agatcctgtc 250
```

actgctgcca ttgaagtttt ttccaatcat cgtcattggg atcattgcat 300 tgatattagc actggccatt ggtctgggca tccacttcga ctgctcaggg 350 aagtacagat gtcgctcatc ctttaagtgt atcgagctga tagctcgatg 400 tgacggagtc tcggattgca aagacgggga ggacgagtac cgctgtgtcc 450 gggtgggtgg tcagaatgcc gtgctccagg tgttcacagc tgcttcgtgg 500 aagaccatgt gctccgatga ctggaagggt cactacgcaa atgttgcctg 550 tgcccaactg ggtttcccaa gctatgtgag ttcagataac ctcagagtga 600 gctcgctgga ggggcagttc cgggaggagt ttgtgtccat cgatcacctc 650 ttgccagatg acaaggtgac tgcattacac cactcagtat atgtgaggga 700 gggatgtgcc tctggccacg tggttacctt gcagtgcaca gcctgtggtc 750 atagaagggg ctacagctca cgcatcgtgg gtggaaacat gtccttgctc 800 tegeagtgge cetggeagge cageetteag tteeaggget accaectgtg 850 cgggggctct gtcatcacgc ccctgtggat catcactgct gcacactgtg 900 tttatgactt gtacctcccc aagtcatgga ccatccaggt gggtctagtt 950 tccctgttgg acaatccagc cccatcccac ttggtggaga agattgtcta 1000 ccacagcaag tacaagccaa agaggctggg caatgacatc gcccttatga 1050 agetggeegg gecaeteaeg tteaatgaaa tgateeagee tgtgtgeetg 1100 cccaactctq aagagaactt ccccgatgga aaagtgtgct ggacgtcagg 1150 atggggggcc acagaggatg gaggtgacgc ctcccctgtc ctgaaccacg 1200 cggccgtccc tttgatttcc aacaagatct gcaaccacag ggacgtgtac 1250 ggtggcatca tctccccctc catgctctgc gcgggctacc tgacgggtgg 1300 cgtggacage tgccaggggg acagcggggg gcccctggtg tgtcaagaga 1350 ggaggetgtg gaagttagtg ggagegaeea getttggeat eggetgegea 1400 gaggtgaaca agcctggggt gtacacccgt gtcacctcct tcctggactg 1450 gatccacgag cagatggaga gagacctaaa aacctgaaga ggaaggggac 1500 aagtagccac ctgagttcct gaggtgatga agacagcccg atcctcccct 1550 ggactcccgt gtaggaacct gcacacgagc agacaccctt ggagctctga 1600 gttccggcac cagtagcagg cccgaaagag gcacccttcc atctgattcc 1650 agcacaacct tcaagctgct ttttgttttt tgtttttttg aggtggagtc 1700

tegetetgtt geceaggetg gagtgeagtg gegaaatece tgeteactge 1750
ageeteeget teeetggtte aagegattet ettgeeteag etteeeeagt 1800
agetgggace acaggtgeee gecaceacae ecaactaatt tttgtattt 1850
tagtagagac agggtteae catgttggee aggetgetet caaaceeetg 1900
accteaaatg atgtgeetge tteageetee cacagtgetg ggattacagg 1950
catgggeeae cacgcetage eteacgetee ttteetgatet teactaagaa 2000
caaaagaage ageaacttge aagggeggee ttteeeactg gteeatetgg 2050
tttteetee agggtettge aaaatteetg aegagataag cagttatgtg 2100
accteacgtg caaageeaee aacageeaet cagaaaagae geaceageee 2150
agaagtgeag aactgeagte actgeacgt tteateteta gggaceagaa 2200
ccaaaceeae eetttetaet teeaagaett attteacat gtggggaggt 2250
taatetagga atgaetegt taaggeetat tteeatgatt teettgtage 2300
atttggtget tgaegtatta ttgteetttg atteeaaata atatgttee 2350
tteeeteatt gtetggegtg tetgegtgga etggtgaegt gaateaaaat 2400
catecactga aa 2412

<210> 69

<211> 453

<212> PRT

<213> Homo sapiens

<400> 69

Met Gly Glu Asn Asp Pro Pro Ala Val Glu Ala Pro Phe Ser Phe 1 5 10 15

Arg Ser Leu Phe Gly Leu Asp Asp Leu Lys Ile Ser Pro Val Ala

Pro Asp Ala Asp Ala Val Ala Ala Gln Ile Leu Ser Leu Leu Pro 35 40 45

Leu Lys Phe Phe Pro Ile Ile Val Ile Gly Ile Ile Ala Leu Ile 50 55 60

Leu Ala Leu Ala Ile Gly Leu Gly Ile His Phe Asp Cys Ser Gly 65 70 75

Lys Tyr Arg Cys Arg Ser Ser Phe Lys Cys Ile Glu Leu Ile Ala 80 85 90

Arg Cys Asp Gly Val Ser Asp Cys Lys Asp Gly Glu Asp Glu Tyr 95 100 105

Arg Cys Val Arg Val Gly Gly Gln Asn Ala Val Leu Gln Val Phe

				110					115					120
Thr	Ala	Ala	Ser	Trp 125	Lys	Thr	Met	Cys	Ser 130	Asp	Asp	Trp	Lys	Gly 135
His	Tyr	Ala	Asn	Val 140	Ala	Cys	Ala	Gln	Leu 145	Gly	Phe	Pro	Ser	Tyr 150
Val	Ser	Ser	Asp	Asn 155	Leu	Arg	Val	Ser	Ser 160	Leu	Glu	Gly	Gln	Phe 165
Arg	Glu	Glu	Phe	Val 170	Ser	Ile	Asp	His	Leu 175	Leu	Pro	Asp	Asp	Lys 180
Val	Thr	Ala	Leu	His 185	His	Ser	Val	Tyr	Val 190	Arg	Glu	Gly	Cys	Ala 195
Ser	Gly	His	Val	Val 200	Thr	Leu	Gln	Cys	Thr 205	Ala	Cys	Gly	His	Arg 210
Arg	Gly	Tyr	Ser	Ser 215	Arg	Ile	Val	Gly	Gly 220	Asn	Met	Ser	Leu	Leu 225
Ser	Gln	Trp	Pro	Trp 230	Gln	Ala	Ser	Leu	Gln 235	Phe	Gln	Gly	Tyr	His 240
Leu	Суѕ	Gly	Gly	Ser 245	Val	Ile	Thr	Pro	Leu 250	Trp	Ile	Ile	Thr	Ala 255
Ala	His	Cys	Val	Tyr 260	Asp	Leu	Tyr	Leu	Pro 265	Lys	Ser	Trp	Thr	Ile 270
Gln	Val	Gly	Leu	Val 275	Ser	Leu	Leu	Asp	Asn 280	Pro	Ala	Pro	Ser	His 285
Leu	Val	Glu	Lys	Ile 290	Val	Tyr	His	Ser	Lys 295	Tyr	Lys	Pro	Lys	Arg 300
Leu	Gly	Asn	Asp	Ile 305	Ala	Leu	Met	Lys	Leu 310	Ala	Gly	Pro	Leu	Thr 315
Phe	Asn	Glu	Met	Ile 320	Gln	Pro	Val	Cys	Leu 325	Pro	Asn	Ser	Glu	Glu 330
Asn	Phe	Pro	Asp	Gly 335	Lys	Val	Cys	Trp	Thr 340	Ser	Gly	Trp	Gly	Ala 345
Thr	Glu	Asp	Gly	Gly 350	Asp	Ala	Ser	Pro	Val 355		Asn	His	Ala	Ala 360
Val	Pro	Leu	Ile	Ser 365	Asn	Lys	Ile	Cys	Asn 370		Arg	Asp	Val	Tyr 375
Gly	Gly	Ile	Ile	Ser 380	Pro	Ser	Met	Leu	Cys 385		Gly	Tyr	Leu	Thr 390
Gly	Gly	Val	Asp	Ser 395	Суз	Gln	Gly	Asp	Ser 400		Gly	Pro	Leu	Val 405

```
Cys Gln Glu Arg Arg Leu Trp Lys Leu Val Gly Ala Thr Ser Phe
                 410
 Gly Ile Gly Cys Ala Glu Val Asn Lys Pro Gly Val Tyr Thr Arg
                                      430
Val Thr Ser Phe Leu Asp Trp Ile His Glu Gln Met Glu Arg Asp
                                                          450
                                      445
 Leu Lys Thr
<210> 70
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 70
 tgacatcgcc cttatgaagc tggc 24
<210> 71
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 71
 tacacgtccc tgtggttgca gatc 24
<210> 72
<211> 50
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 72
 cgttcaatgc agaaatgatc cagcctgtgt gcctgcccaa ctctgaagag 50
<210> 73
<211> 3305
<212> DNA
<213> Homo sapiens
<400> 73
 cccacqcqtc cqtcctagtc cccgggccaa ctcggacagt ttgctcattt 50
```

attgcaacgg tcaaggctgg cttgtgccag aacggcgcgc gcgcgcgcac 100 gcacgcacac acacgggggg aaactttttt aaaaatgaaa ggctagaaga 150 gctcagcggc ggcgcgggcg ctgcgcgagg gctccggagc tgactcgccg 200

aggeaggaaa teeeteeggt egegaegeee ggeeeegget eggegeeege 250 gtgggatggt gcagcgctcg ccgccgggcc cgagagctgc tgcactgaag 300 geeggegaeg atggeagege geeegetgee egtgteeece geeegegeee 350 teetgetege cetggeeggt getetgeteg egecetgega ggeeegaggg 400 gtgagcttat ggaaccaagg aagagctgat gaagttgtca gtgcctctgt 450 tcggagtggg gacctctgga tcccagtgaa gagcttcgac tccaagaatc 500 atccagaagt gctgaatatt cgactacaac gggaaagcaa agaactgatc 550 ataaatctgg aaagaaatga aggtctcatt gccagcagtt tcacggaaac 600 ccactatctg caagacggta ctgatgtctc cctcgctcga aattacacgg 650 gtcactgtta ctaccatgga catgtacggg gatattctga ttcagcagtc 700 agtctcagca cgtgttctgg tctcagggga cttattgtgt ttgaaaatga 750 aagctatgtc ttagaaccaa tgaaaagtgc aaccaacaga tacaaactct 800 aacacaccaa acctegetge aaagaatgtg tttecaccae ceteteagae 900 atgggcaaga aggcataaaa gagagaccct caaggcaact aagtatgtgg 950 agctggtgat cgtggcagac aaccgagagt ttcagaggca aggaaaagat 1000 ctggaaaaag ttaagcagcg attaatagag attgctaatc acgttgacaa 1050 gttttacaga ccactgaaca ttcggatcgt gttggtaggc gtggaagtgt 1100 ggaatgacat ggacaaatgc tctgtaagtc aggacccatt caccagcctc 1150 catgaatttc tggactggag gaagatgaag cttctacctc gcaaatccca 1200 tgacaatgcg cagcttgtca gtggggttta tttccaaggg accaccatcg 1250 gcatggcccc aatcatgagc atgtgcacgg cagaccagtc tgggggaatt 1300 gtcatggacc attcagacaa tccccttggt gcagccgtga ccctggcaca 1350 tgagctgggc cacaatttcg ggatgaatca tgacacactg gacaggggct 1400 gtagctgtca aatggcggtt gagaaaggag gctgcatcat gaacgcttcc 1450 accgggtacc catttcccat ggtgttcagc agttgcagca ggaaggactt 1500 ggagaccagc ctggagaaag gaatgggggt gtgcctgttt aacctgccgg 1550 aaqtcaqqqa qtctttcggg ggccagaagt gtgggaacag atttgtggaa 1600 qaaqqaqaqq agtgtgactg tggggagcca gaggaatgta tgaatcgctg 1650 ctgcaatgcc accacctgta ccctgaagcc ggacgctgtg tgcgcacatg 1700 ggctgtgctg tgaagactgc cagctgaagc ctgcaggaac agcgtgcagg 1750 gactccagca actcctgtga cctcccagag ttctgcacag gggccagccc 1800 tcactgccca gccaatgtgt acctgcacga tgggcactca tgtcaggatg 1850 tggacggcta ctgctacaat ggcatctgcc agactcacga gcagcagtgt 1900 gtcacgctct ggggaccagg tgctaaacct gcccctggga tctgctttga 1950 gagagtcaat tctgcaggtg atccttatgg caactgtggc aaagtctcga 2000 agagttcctt tgccaaatgc gagatgagag atgctaaatg tggaaaaatc 2050 cagtgtcaag gaggtgccag ccggccagtc attggtacca atgccgtttc 2100 catagaaaca aacatccctc tgcagcaagg aggccggatt ctgtgccggg 2150 ggacccacgt gtacttgggc gatgacatgc cggacccagg gcttgtgctt 2200 gcaggcacaa agtgtgcaga tggaaaaatc tgcctgaatc gtcaatgtca 2250 aaatattagt gtctttgggg ttcacgagtg tgcaatgcag tgccacggca 2300 gaggggtgtg caacaacagg aagaactgcc actgcgaggc ccactgggca 2350 cctcccttct gtgacaagtt tggctttgga ggaagcacag acagcggccc 2400 catcoggcaa gcagaagcaa ggcaggaagc tgcagagtcc aacagggagc 2450 gcggccaggg ccaggagccc gtgggatcgc aggagcatgc gtctactgcc 2500 tcactgacac tcatctgagc cctcccatga catggagacc gtgaccagtg 2550 ctgctgcaga ggaggtcacg cgtccccaag gcctcctgtg actggcagca 2600 ttgactctgt ggctttgcca tcgtttccat gacaacagac acaacacagt 2650 tctcggggct caggaggga agtccagcct accaggcacg tctgcagaaa 2700 cagtgcaagg aagggcagcg acttcctggt tgagcttctg ctaaaacatg 2750 gacatgette agtgetgete etgagagagt ageaggttae caetetggea 2800 ggccccagcc ctgcagcaag gaggaagagg actcaaaagt ctggcctttc 2850 actgagcctc cacagcagtg ggggagaagc aagggttggg cccagtgtcc 2900 cctttcccca gtgacacctc agccttggca gccctgatga ctggtctctg 2950 gctgcaactt aatgctctga tatggctttt agcatttatt atatgaaaat 3000 agcagggttt tagtttttaa tttatcagag accetgeeac eeatteeate 3050 tccatccaag caaactgaat ggcaatgaaa caaactggag aagaaggtag 3100

gagaaagggc ggtgaactct ggctctttgc tgtggacatg cgtgaccagc 3150 agtactcagg tttgagggtt tgcagaaagc cagggaaccc acagagtcac 3200 caacccttca tttaacaagt aagaatgtta aaaagtgaaa acaatgtaag 3250 agcctaactc catccccgt ggccattact gcataaaata gagtgcattt 3300 gaaat 3305

<210> 74

<211> 735

<212> PRT

<213> Homo sapiens

<400> 74

Met Ala Ala Arg Pro Leu Pro Val Ser Pro Ala Arg Ala Leu Leu 1 5 10 15

Leu Ala Leu Ala Gly Ala Leu Leu Ala Pro Cys Glu Ala Arg Gly 20 25 30

Val Ser Leu Trp Asn Gln Gly Arg Ala Asp Glu Val Val Ser Ala 35 40 45

Ser Val Arg Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp 50 55 60

Ser Lys Asn His Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu 65 70 75

Ser Lys Glu Leu Ile Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile 80 85 90

Ala Ser Ser Phe Thr Glu Thr His Tyr Leu Gln Asp Gly Thr Asp 95 100 105

Val Ser Leu Ala Arg Asn Tyr Thr Gly His Cys Tyr Tyr His Gly
110 115 120

His Val Arg Gly Tyr Ser Asp Ser Ala Val Ser Leu Ser Thr Cys 125 130 135

Ser Gly Leu Arg Gly Leu Ile Val Phe Glu Asn Glu Ser Tyr Val 140 145 150

Leu Glu Pro Met Lys Ser Ala Thr Asn Arg Tyr Lys Leu Phe Pro 155 160 165

Ala Lys Lys Leu Lys Ser Val Arg Gly Ser Cys Gly Ser His His
170 175 180

Asn Thr Pro Asn Leu Ala Ala Lys Asn Val Phe Pro Pro Pro Ser 185 190 195

Gln Thr Trp Ala Arg Arg His Lys Arg Glu Thr Leu Lys Ala Thr 200 205 210

Lys Tyr	Val	Glu	Leu 215	Val	Ile	Val	Ala	Asp 220	Asn	Arg	Glu	Phe	Gln 225
Arg Gln	Gly	Lys	Asp 230	Leu	Glu	Lys	Val	Lys 235	Gln	Arg	Leu	Ile	Glu 240
Ile Ala	Asn	His	Val 245	Asp	Lys	Phe	Tyr	Arg 250	Pro	Leu	Asn	Ile	Arg 255
Ile Val	Leu	Val	Gly 260	Val	Glu	Val	Trp	Asn 265	Asp	Met	Asp	Lys	Cys 270
Ser Val	Ser	Gln	Asp 275	Pro	Phe	Thr	Ser	Leu 280	His	Glu	Phe	Leu	Asp 285
Trp Arg	Lys	Met	Lys 290	Leu	Leu	Pro	Arg	Lys 295	Ser	His	Asp	Asn	Ala 300
Gln Leu	Val	Ser	Gly 305	Val	Tyr	Phe	Gln	Gly 310	Thr	Thr	Ile	Gly	Met 315
Ala Pro	Ile	Met	Ser 320	Met	Cys	Thr	Ala	Asp 325	Gln	Ser	Gly	Gly	Ile 330
Val Met	Asp	His	Ser 335	Asp	Asn	Pro	Leu	Gly 340	Ala	Ala	Val	Thr	Leu 345
Ala His	Glu	Leu	Gly 350	His	Asn	Phe	Gly	Met 355	Asn	His	Asp	Thr	Leu 360
Asp Arg	Gly	Cys	Ser 365	Cys	Gln	Met	Ala	Val 370	Glu	Lys	Gly	Gly	Cys 375
Ile Met	Asn	Ala	Ser 380	Thr	Gly	Tyr	Pro	Phe 385	Pro	Met	Val	Phe	Ser 390
Ser Cys	Ser	Arg	Lys 395	Asp	Leu	Glu	Thr	Ser 400	Leu	Glu	Lys	Gly	Met 405
Gly Val	Cys	Leu	Phe 410	Asn	Leu	Pro	Glu	Val 415	Arg	Glu	Ser	Phe	Gly 420
Gly Gln	Lys	Cys	Gly 425	Asn	Arg	Phe	Val	Glu 430	Glu	Gly	Glu	Glu	Cys 435
Asp Cys	Gly	Glu	Pro 440	Glu	Glu	Cys	Met	Asn 445	Arg	Cys	Cys	Asn	Ala 450
Thr Thr	Cys	Thr	Leu 455	Lys	Pro	Asp	Ala	Val 460	Cys	Ala	His	Gly	Leu 465
Cys Cys	Glu	Asp	Cys 470	Gln	Leu	Lys	Pro	Ala 475	Gly	Thr	Ala	Cys	Arg 480
Asp Ser	Ser	Asn	Ser 485	Cys	Asp	Leu	Pro	Glu 490	Phe	Cys	Thr	Gly	Ala 495
Ser Pro	His	Cys	Pro	Ala	Asn	Val	Tyr	Leu	His	Asp	Gly	His	Ser

<400> 75

				500					505					510
Cys	Gln	Asp	Val	Asp 515	Gly	Tyr	Cys	Tyr	Asn 520	Gly	Ile	Cys	Gln	Thr 525
His	Glu	Gln	Gln	Cys 530	Val	Thr	Leu	Trp	Gly 535	Pro	Gly	Ala	Lys	Pro 540
Ala	Pro	Gly	Ile	Cys 545	Phe	Glu	Arg	Val	Asn 550	Ser	Ala	Gly	Asp	Pro 555
Tyr	Gly	Asn	Cys	Gly 560	Lys	Val	Ser	Lys	Ser 565	Ser	Phe	Ala	Lys	Cys 570
Glu	Met	Arg	Asp	Ala 575	Lys	Суѕ	Gly	Lys	Ile 580	Gln	Суз	Gln	Gly	Gly 585
Ala	Ser	Arg	Pro	Val 590	Ile	Gly	Thr	Asn	Ala 595	Val	Ser	Ile	Glu	Thr 600
Asn	Ile	Pro	Leu	Gln 605	Gln	Gly	Gly	Arg	Ile 610	Leu	Суз	Arg	Gly	Thr 615
His	Val	Tyr	Leu	Gly 620	Asp	Asp	Met	Pro	Asp 625	Pro	Gly	Leu	Val	Leu 630
Ala	Gly	Thr	Lys	Cys 635	Ala	Asp	Gly	Lys	Ile 640	Cys	Leu	Asn	Arg	Gln 645
Cys	Gln	Asn	Ile	Ser 650	Val	Phe	Gly	Val	His 655	Glu	Cys	Ala	Met	Gln 660
Cys	His	Gly	Arg	Gly 665	Val	Cys	Asn	Asn	Arg 670	Lys	Asn	Cys	His	Cys 675
Glu	Ala	His	Trp	Ala 680	Pro	Pro	Phe	Cys	Asp 685	Lys	Phe	Gly	Phe	Gly 690
Gly	Ser	Thr	Asp	Ser 695	Gly	Pro	Ile	Arg	Gln 700	Ala	Glu	Ala	Arg	Gln 705
Glu	Ala	Ala	Glu	Ser 710	Asn	Arg	Glu	Arg	Gly 715	Gln	Gly	Gln	Glu	Pro 720
Val	Gly	Ser	Gln	Glu 725	His	Ala	Ser	Thr	Ala 730		Leu	Thr	Leu	Ile 735
<2102 <2112 <2122 <2132	> 48. > DN	A	apie	ns										
<2212 <2222	<213> Homo sapiens <220> <221> unsure <222> 30, 94, 143, 156, 163, 179, 193, 369, 371, 381, 390, 473 <223> unknown base													

```
tcccaaggct tcttggatgg cagatgattn tggggttttg cattgtttcc 50
 ctgacaacga aaacaaaaca gttttggggg ttcaggaggg gaantccagc 100
 ctacccagga agtttgcaga aacagtgcaa ggaagggcag ganttcctgg 150
 ttgagntttt tgntaaaaca tggacatgnt tcagtgctgc tcntgagaga 200
 gtagcaggtt accaettttg gcaggeecca geeetgcage aaggaggaag 250
 aggactcaaa agtttggcct ttcactgagc ctccacagca gtgggggaga 300
 agcaagggtt gggcccagtg tcccctttcc ccagtgacac ctcagccttg 350
 gcagccctga taactggtnt ntggctgcaa nttaatgctn tgatatggct 400
 tttagcattt attatatgaa aatagcaggg ttttagtttt taatttatca 450
 gagaccctgc cacccattcc atntccatcc aag 483
<210> 76
<211> 27
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 76
gtctcagcac gtgttctggt ctcaggg 27
<210> 77
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 77
catgagcatg tgcacggc 18
<210> 78
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 78
 tacctgcacg atgggcac 18
<210> 79
<211> 18
<212> DNA
<213> Artificial Sequence
```

```
<220>
<223> Synthetic oligonucleotide probe
<400> 79
 cactgggcac ctcccttc 18
<210> 80
<211> 26
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 80
 ctccaggctg gtctccaagt ccttcc 26
<210> 81
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 81
 tccctgttgg actctgcagc ttcc 24
<210> 82
<211> 19
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 82
 cttcgctggg aagagtttg 19
<210> 83
<211> 50
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 83
 gtgcaaccaa cagatacaaa ctcttcccag cgaagaagct gaaaagcgtc 50
<210> 84
<211> 1714
<212> DNA
<213> Homo sapiens
<400> 84
 catcctgcaa catggtgaaa ccacgcctgg ctaattttgt tgtatttttg 50
```

gtagagatgg gatttcaccg tgttagccag gattgtctca atctgacctc 100 atgatetgee egecteggee teceaaagtg etgggattae aggegagtge 150 aaccacaccc ggccacaaac tttttaagaa gttaatgaaa ccataccttt 200 tacattttta atgacaggaa aatgctcaca ataattgtta acccaaaatt 250 ctggatacaa aagtacaatc tttactgtgt aaatacatgt atatgtacta 300 tatgaaaata taccaaatat caataatact tatctctggg taaaaacctc 350 ttctcatacc ctgtgctaac aacttttaac aaaaaatttg catcactttt 400 aagaatcaag aaaaatttct gaaggtcata tgggacagaa aaaaaaacca 450 agggaaaaat cacgccactt gggaaaaaaa gattcgaaat ctgccttttt 500 atagatttgt aattaataag gtccaggctt tctaagcaac ttaaatgttt 550 tgtttcgaaa caaagtactt gtctggatgt aggaggaaag ggagtgatgt 600 cactgccatt atgatgcccc ttgaatataa gaccctactt gctatctccc 650 ctgcaccage caggagecae ecatecteca geacaetgag cageaagetg 700 gacacacggc acactgatcc aaatgggtaa ggggatggtg gcgatgctca 750 ttctgggtct gctacttctg gcgctgctcc tacccgtgca ggtttcttca 800 tttgttcctt taaccagtat gccggaagct actgcagccg aaaccacaaa 850 gccctccaac agtgccctac agcctacagc cggtctcctt gtggtcttgc 900 ttgcccttct acatctctac cattaagagg caggtcaaga aacagctaca 950 gttctccaac ccatacacta aaaccgaatc caaatggtgc ctagaagttc 1000 aatgtggcaa ggaaaaaaac caggtcttca tcaaatctac taatttcact 1050 ccttattaac agagaaacgc ttgagagtct caaactggac tggtttaaag 1100 agcatctgaa ggatttgact agatgataaa tgcctgtact cccagtactt 1150 tgggaggcct aggccggcgg atcacctgag gtcaggagtt tgagactaac 1200 ctggccaaaa tggtgaaacc ccatctgtac taaaaataca aatattgact 1250 gggcgtggtg gtgagtgcct gtgatcccag ctactcaggt ggctgaagca 1300 ggacaatcac ttgaactcag gaggcagagg ttgcagtgag ctgagatcgc 1350 gctactgcac tctagcctag cctgggcaac agagtgagac ttcgtctcaa 1400 aaaaaaaaa gccaagtgca gtggctcacg cctgtaatcc cggcactttg 1450 ggaggccgag gtgggcggat cacgaggtca ggagatcaag accatcctgg 1500

<210> 85

<211> 67

<212> PRT

<213> Homo sapiens

<400> 85

Met Gly Lys Gly Met Val Ala Met Leu Ile Leu Gly Leu Leu 1 5 10 15

Leu Ala Leu Leu Pro Val Gln Val Ser Ser Phe Val Pro Leu 20 25 30

Thr Ser Met Pro Glu Ala Thr Ala Ala Glu Thr Thr Lys Pro Ser 35 40 45

Asn Ser Ala Leu Gln Pro Thr Ala Gly Leu Leu Val Val Leu Leu 50 55 60

Ala Leu Leu His Leu Tyr His

<210> 86

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 86

acgggcacac tggatcccaa atg 23

<210> 87

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 87

ggtagagatg tagaagggca agcaagacc 29

<210> 88

<211> 50

<212> DNA

<213> Artificial Sequence

```
<220>
<223> Synthetic oligonucleotide probe
<400> 88
getecetace egtgeaggtt tetteatttg tteetttaac eagtatgeeg 50
<210> 89
<211> 2956
<212> DNA
<213> Homo sapiens
<400> 89
 geogegega gagegegee ageceegeeg egatgeeege gegeeeagga 50
 cgcctcctcc cgctgctggc ccggccggcg gccctgactg cgctgctgct 100
 gctgctgctg ggccatggcg gcggcgggcg ctggggcgcc cgggcccagg 150
 aggeggegge gaegggeece eegeggeaga eggegaggae 200
 ggacaggacc cgcacagcaa gcacctgtac acggccgaca tgttcacgca 250
 cgggatccag agcgccgcgc acttcgtcat gttcttcgcg ccctggtgtg 300
 gacactgcca gcggctgcag ccgacttgga atgacctggg agacaaatac 350
 aacagcatgg aagatgccaa agtctatgtg gctaaagtgg actgcacggc 400
 ccactccgac gtgtgctccg cccagggggt gcgaggatac cccaccttaa 450
 agcttttcaa gccaggccaa gaagctgtga agtaccaggg tcctcgggac 500
 ttccagacac tggaaaactg gatgctgcag acactgaacg aggagccagt 550
 gacaccagag ccggaagtgg aaccgcccag tgcccccgag ctcaagcaag 600
 ggctgtatga gctctcagca agcaactttg agctgcacgt tgcacaaggc 650
 gaccacttta tcaagttctt cgctccgtgg tgtggtcact gcaaagccct 700
 ggctccaacc tgggagcagc tggctctggg ccttgaacat tccgaaactg 750
 tcaagattgg caaggttgat tgtacacagc actatgaact ctgctccgga 800
 aaccaggttc gtggctatcc cactcttctc tggttccgag atgggaaaaa 850
 ggtggatcag tacaagggaa agcgggattt ggagtcactg agggagtacg 900
 tggagtcgca gctgcagcgc acagagactg gagcgacgga gaccgtcacg 950
 ccctcagagg ccccggtgct ggcagctgag cccgaggctg acaagggcac 1000
 tgtgttggca ctcactgaaa ataacttcga tgacaccatt gcagaaggaa 1050
 taaccttcat caagttttat gctccatggt gtggtcattg taagactctg 1100
```

qctcctactt gggaggaact ctctaaaaag gaattccctg gtctggcggg 1150

ggtcaagatc gccgaagtag actgcactgc tgaacggaat atctgcagca 1200 agtatteggt acgaggetae eccaegttat tgetttteeg aggagggaag 1250 aaagtcagtg agcacagtgg aggcagagac cttgactcgt tacaccgctt 1300 tgtcctgagc caagcgaaag acgaacttta ggaacacagt tggaggtcac 1350 ctctcctgcc cagctcccgc accctgcgtt taggagttca gtcccacaga 1400 ggccactggg ttcccagtgg tggctgttca gaaagcagaa catactaagc 1450 gtgaggtatc ttctttgtgt gtgtgttttc caagccaaca cactctacag 1500 attetttatt aagttaagtt tetetaagta aatgtgtaae teatggteae 1550 tgtgtaaaca ttttcagtgg cgatatatcc cctttgacct tctcttgatg 1600 aaatttacat ggtttccttt gagactaaaa tagcgttgag ggaaatgaaa 1650 ttgctggact atttgtggct cctgagttga gtgattttgg tgaaagaaag 1700 cacatccaaa gcatagttta cctgcccacg agttctggaa aggtggcctt 1750 gtggcagtat tgacgttcct ctgatcttaa ggtcacagtt gactcaatac 1800 tgtgttggtc cgtagcatgg agcagattga aatgcaaaaa cccacacctc 1850 tggaagatac cttcacggcc gctgctggag cttctgttgc tgtgaatact 1900 tctctcagtg tgagaggtta gccgtgatga aagcagcgtt acttctgacc 1950 gtgcctgagt aagagaatgc tgatgccata actttatgtg tcgatacttg 2000 tcaaatcagt tactgttcag gggatccttc tgtttctcac ggggtgaaac 2050 atgtetttag tteeteatgt taacaegaag eeagageeca catgaactgt 2100 tggatgtctt ccttagaaag ggtaggcatg gaaaattcca cgaggctcat 2150 tctcagtatc tcattaactc attgaaagat tccagttgta tttgtcacct 2200 ggggtgacaa gaccagacag gctttcccag gcctgggtat ccagggaggc 2250 tetgeageee tgetgaaggg ceetaactag agttetagag tttetgatte 2300 tgtttctcag tagtcctttt agaggcttgc tatacttggt ctgcttcaag 2350 gaggtcgacc ttctaatgta tgaagaatgg gatgcatttg atctcaagac 2400 caaagacaga tgtcagtggg ctgctctggc cctggtgtgc acggctgtgg 2450 cagctgttga tgccagtgtc ctctaactca tgctgtcctt gtgattaaac 2500 acctctatct cccttgggaa taagcacata caggcttaag ctctaagata 2550 gataggtgtt tgtcctttta ccatcgagct acttcccata ataaccactt 2600

tgcatccaac actcttcacc cacctcccat acgcaagggg atgtggatac 2650 ttggcccaaa gtaactggtg gtaggaatct tagaaacaag accacttata 2700 ctgtctgtct gaggcagaag ataacagcag catctcgacc agcctctgcc 2750 ttaaaggaaa tctttattaa tcacgtatgg ttcacagata attcttttt 2800 taaaaaaacc caacctccta gagaagcaca actgtcaaga gtcttgtaca 2850 cacaacttca gctttgcatc acgagtcttg tattccaaga aaatcaaagt 2900 ggtacaattt gtttgttac actatgatac tttctaaata aactctttt 2950 ttttaa 2956

<210> 90 <211> 432

<212> PRT

<213> Homo sapiens

<400> 90

Met Pro Ala Arg Pro Gly Arg Leu Leu Pro Leu Leu Ala Arg Pro 1 5 10 15

Ala Ala Leu Thr Ala Leu Leu Leu Leu Leu Gly His Gly Gly 20 25 30

Gly Gly Arg Trp Gly Ala Arg Ala Gln Glu Ala Ala Ala Ala Ala 35 40 45

Ala Asp Gly Pro Pro Ala Ala Asp Gly Glu Asp Gly Gln Asp Pro
50 55 60

His Ser Lys His Leu Tyr Thr Ala Asp Met Phe Thr His Gly Ile 65 70 75

Gln Ser Ala Ala His Phe Val Met Phe Phe Ala Pro Trp Cys Gly 80 85 90

His Cys Gln Arg Leu Gln Pro Thr Trp Asn Asp Leu Gly Asp Lys 95 100 105

Tyr Asn Ser Met Glu Asp Ala Lys Val Tyr Val Ala Lys Val Asp 110 115 120

Cys Thr Ala His Ser Asp Val Cys Ser Ala Gln Gly Val Arg Gly 125 130 135

Tyr Pro Thr Leu Lys Leu Phe Lys Pro Gly Gln Glu Ala Val Lys

Tyr Gln Gly Pro Arg Asp Phe Gln Thr Leu Glu Asn Trp Met Leu 155 160 165

Gln Thr Leu Asn Glu Glu Pro Val Thr Pro Glu Pro Glu Val Glu 170 175 180

```
Pro Pro Ser Ala Pro Glu Leu Lys Gln Gly Leu Tyr Glu Leu Ser
Ala Ser Asn Phe Glu Leu His Val Ala Gln Gly Asp His Phe Ile
                200
Lys Phe Phe Ala Pro Trp Cys Gly His Cys Lys Ala Leu Ala Pro
                215
Thr Trp Glu Gln Leu Ala Leu Gly Leu Glu His Ser Glu Thr Val
                                                        240
                230
Lys Ile Gly Lys Val Asp Cys Thr Gln His Tyr Glu Leu Cys Ser
Gly Asn Gln Val Arg Gly Tyr Pro Thr Leu Leu Trp Phe Arg Asp
Gly Lys Lys Val Asp Gln Tyr Lys Gly Lys Arg Asp Leu Glu Ser
Leu Arg Glu Tyr Val Glu Ser Gln Leu Gln Arg Thr Glu Thr Gly
                290
Ala Thr Glu Thr Val Thr Pro Ser Glu Ala Pro Val Leu Ala Ala
                305
Glu Pro Glu Ala Asp Lys Gly Thr Val Leu Ala Leu Thr Glu Asn
                320
Asn Phe Asp Asp Thr Ile Ala Glu Gly Ile Thr Phe Ile Lys Phe
                335
Tyr Ala Pro Trp Cys Gly His Cys Lys Thr Leu Ala Pro Thr Trp
                350
                                                         360
Glu Glu Leu Ser Lys Lys Glu Phe Pro Gly Leu Ala Gly Val Lys
Ile Ala Glu Val Asp Cys Thr Ala Glu Arg Asn Ile Cys Ser Lys
                                                         390
Tyr Ser Val Arg Gly Tyr Pro Thr Leu Leu Phe Arg Gly Gly
                395
Lys Lys Val Ser Glu His Ser Gly Gly Arg Asp Leu Asp Ser Leu
                410
His Arg Phe Val Leu Ser Gln Ala Lys Asp Glu Leu
                425
```

<210> 91

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

```
<400> 91
 atgttcttcg cgccctggtg 20
<210> 92
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 92
 ccaagccaac acactctaca g 21
<210> 93
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 93
 aagtggtcgc cttgtgcaac gtgc 24
<210> 94
<211> 23
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 94
 ggtcaaaggg gatatatcgc cac 23
<210> 95
<211> 49
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 95
 gcatggaaga tgccaaagtc tatgtggcta aagtggactg cacggccca 49
<210> 96
<211> 1016
<212> DNA
<213> Homo sapiens
<400> 96
cttttctgag gaaccacagc aatgaatggc tttgcatcct tgcttcgaag 50
 aaaccaattt atcctcctgg tactatttct tttgcaaatt cagagtctgg 100
 gtctggatat tgatagccgt cctaccgctg aagtctgtgc cacacacaca 150
```

atttcaccag gacccaaagg agatgatggt gaaaaaggag atccaggaga 200 agagggaaag catggcaaag tgggacgcat ggggccgaaa ggaattaaag 250 gagaactggg tgatatggga gatcagggca atattggcaa gactgggccc 300 attgggaaga agggtgacaa aggggaaaaa ggtttgcttg gaatacctqg 350 agaaaaaggc aaagcaggta ctgtctgtga ttgtggaaga taccggaaat 400 ttgttggaca actggatatt agtattgctc ggctcaagac atctatgaag 450 tttgtcaaga atgtgatagc agggattagg gaaactgaag agaaattcta 500 ctacatcgtg caggaagaga agaactacag ggaatcccta acccactgca 550 ggattcgggg tggaatgcta gccatgccca aggatgaagc tgccaacaca 600 ctcatcgctg actatgttgc caagagtggc ttctttcggg tgttcattgg 650 cgtgaatgac cttgaaaggg agggacagta catgtccaca gacaacactc 700 cactgcagaa ctatagcaac tggaatgagg gggaacccag cgacccctat 750 ggtcatgagg actgtgtgga gatgctgagc tctggcagat ggaatgacac 800 agagtgccat cttaccatgt actttgtctg tgagttcatc aagaagaaaa 850 agtaacttcc ctcatcctac gtatttgcta ttttcctgtg accgtcatta 900 cagttattgt tatccatcct ttttttcctg attgtactac atttgatctg 950 agtcaacata gctagaaaat gctaaactga ggtatggagc ctccatcatc 1000 aaaaaaaaa aaaaaa 1016

<210> 97

<211> 277

<212> PRT

<213> Homo sapiens

<400> 97

Met Asn Gly Phe Ala Ser Leu Leu Arg Arg Asn Gln Phe Ile Leu 1 5 10 15

Leu Val Leu Phe Leu Leu Gln Ile Gln Ser Leu Gly Leu Asp Ile 20 25 30

Asp Ser Arg Pro Thr Ala Glu Val Cys Ala Thr His Thr Ile Ser 35 40 45

Pro Gly Pro Lys Gly Asp Asp Gly Glu Lys Gly Asp Pro Gly Glu
50 55 60

Glu Gly Lys His Gly Lys Val Gly Arg Met Gly Pro Lys Gly Ile 65 70 75

Lys Gly Glu Leu Gly Asp Met Gly Asp Gln Gly Asn Ile Gly Lys

Thr Gly Pro Ile Gly Lys Lys Gly Asp Lys Gly Glu Lys Gly Leu 95 100 105

Leu Gly Ile Pro Gly Glu Lys Gly Lys Ala Gly Thr Val Cys Asp 110 115 120

Cys Gly Arg Tyr Arg Lys Phe Val Gly Gln Leu Asp Ile Ser Ile 125 130 135

Ala Arg Leu Lys Thr Ser Met Lys Phe Val Lys Asn Val Ile Ala 140 145 150

Gly Ile Arg Glu Thr Glu Glu Lys Phe Tyr Tyr Ile Val Gln Glu 155 160 165

Glu Lys Asn Tyr Arg Glu Ser Leu Thr His Cys Arg Ile Arg Gly
170 175 180

Gly Met Leu Ala Met Pro Lys Asp Glu Ala Ala Asn Thr Leu Ile \$185\$

Ala Asp Tyr Val Ala Lys Ser Gly Phe Phe Arg Val Phe Ile Gly 200 205 210

Val Asn Asp Leu Glu Arg Glu Gly Gln Tyr Met Ser Thr Asp Asn 215 220 225

Thr Pro Leu Gln Asn Tyr Ser Asn Trp Asn Glu Gly Glu Pro Ser 230 235 240

Asp Pro Tyr Gly His Glu Asp Cys Val Glu Met Leu Ser Ser Gly 245 250 255

Arg Trp Asn Asp Thr Glu Cys His Leu Thr Met Tyr Phe Val Cys 260 265 270

Glu Phe Ile Lys Lys Lys Lys 275

<210> 98

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 98

cgctgactat gttgccaaga gtgg 24

<210> 99

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

```
<223> Synthetic oligonucleotide probe
<400> 99
 gatgatggag gctccatacc tcag 24
<210> 100
<211> 50
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 100
 gtgttcattg gcgtgaatga ccttgaaagg gagggacagt acatgttcac 50
<210> 101
<211> 2574
<212> DNA
<213> Homo sapiens
<400> 101
 ggttctatcg attcgaattc ggccacactg gccggatcct ctagagatcc 50
 ctcgacctcg acccacgcgt ccgctgctct ccgcccgtgt ggagtggtgg 100
 gggcctgggt gggaatgggc gtgtgccagc gcacgcgcgc tccctggaag 150
 gagaagtctc agctagaacg agcggcccta ggttttcgga agggaggatc 200
 agggatgttt gcgagcggct ggaaccagac ggtgccgata gaggaagcgg 250
 gctccatggc tgccctcctg ctgctgcccc tgctgctgtt gctaccgctg 300
 ctgctgctga agctacacct ctggccgcag ttgcgctggc ttccggcgga 350
 cttggccttt gcggtgcgag ctctgtgctg caaaagggct cttcgagctc 400
 gcgccctggc cgcggctgcc gccgacccgg aaggtcccga ggggggctgc 450
 agcctggcct ggcgcctcgc ggaactggcc cagcagcgcg ccgcgcacac 500
 ctttctcatt cacggctcgc ggcgctttag ctactcagag gcggagcgcg 550
 agagtaacag ggctgcacgc gccttcctac gtgcgctagg ctgggactgg 600
 ggacccgacg gcggcgacag cggcgagggg agcgctggag aaggcgagcg 650
 ggcagcgccg ggagccggag atgcagcggc cggaagcggc gcggagtttg 700
 ccggagggga cggtgccgcc agaggtggag gagccgccgc ccctctgtca 750
 cctggagcaa ctgtggcgct gctcctcccc gctggcccag agtttctgtg 800
gctctggttc gggctggcca aggccggcct gcgcactgcc tttgtgccca 850
```

ccgccctgcg ccggggcccc ctgctgcact gcctccgcag ctgcggcgcg 900

cgcgcgctgg tgctggcgcc agagtttctg gagtccctgg agccggacct 950 gcccgccctg agagccatgg ggctccacct gtgggctgca ggcccaggaa 1000 cccaccctgc tggaattagc gatttgctgg ctgaagtgtc cgctgaagtg 1050 gatgggccag tgccaggata cctctcttcc ccccagagca taacagacac 1100 gtgcctgtac atcttcacct ctggcaccac gggcctcccc aaggctgctc 1150 ggatcagtca tctgaagatc ctgcaatgcc agggcttcta tcagctgtgt 1200 ggtgtccacc aggaagatgt gatctacctc gccctcccac tctaccacat 1250 gtccggttcc ctgctgggca tcgtgggctg catgggcatt ggggccacag 1300 tggtgctgaa atccaagttc tcggctggtc agttctggga agattgccag 1350 cagcacaggg tgacggtgtt ccagtacatt ggggagctgt gccgatacct 1400 tgtcaaccag cccccgagca aggcagaacg tggccataag gtccggctgg 1450 cagtgggcag cgggctgcgc ccagatacct gggagcgttt tgtgcggcgc 1500 ttcgggcccc tgcaggtgct ggagacatat ggactgacag agggcaacgt 1550 ggccaccatc aactacacag gacagcgggg cgctgtgggg cgtgcttcct 1600 ggctttacaa gcatatette eeetteteet tgattegeta tgatgteace 1650 acaggagage caatteggga ecceeagggg caetgtatgg ecacatetee 1700 aggtgagcca gggctgctgg tggccccggt aagccagcag tccccattcc 1750 tgggctatgc tggcgggcca gagctggccc aggggaagtt gctaaaggat 1800 gtcttccggc ctggggatgt tttcttcaac actggggacc tgctggtctg 1850 cgatgaccaa ggttttctcc gcttccatga tcgtactgga gacaccttca 1900 ggtggaaggg ggagaatgtg gccacaaccg aggtggcaga ggtcttcgag 1950 gccctagatt ttcttcagga ggtgaacgtc tatggagtca ctgtgccagg 2000 gcatgaaggc agggctggaa tggcagccct agttctgcgt ccccccacg 2050 ctttggacct tatgcagctc tacacccacg tgtctgagaa cttgccacct 2100 tatgcccggc cccgattcct caggctccag gagtctttgg ccaccacaga 2150 gaccttcaaa cagcagaaag ttcggatggc aaatgagggc ttcgacccca 2200 gcaccetgte tgacceactg tacgttetgg accaggetgt aggtgcetae 2250 etgecectea caactgeeeg gtacagegee eteetggeag gaaacetteg 2300 aatctgagaa cttccacacc tgaggcacct gagagaggaa ctctgtgggg 2350

tgggggccgt tgcaggtgta ctgggctgtc agggatcttt tctataccag 2400 aactgcggtc actatttgt aataaatgtg gctggagctg atccagctgt 2450 ctctgaccta aaaaaaaaa aaaaaaaaa aaaaaaaaa ggcggccgcg 2500 actctagagt cgacctgcag tagggataac agggtaataa gcttggccgc 2550 catggccaa cttgtttatt gcag 2574

<210> 102

<211> 730

<212> PRT

<213> Homo sapiens

<400> 102

Met Gly Val Cys Gln Arg Thr Arg Ala Pro Trp Lys Glu Lys Ser 1 5 10 15

Gln Leu Glu Arg Ala Ala Leu Gly Phe Arg Lys Gly Gly Ser Gly
20 25 30

Met Phe Ala Ser Gly Trp Asn Gln Thr Val Pro Ile Glu Glu Ala 35 40 45

Gly Ser Met Ala Ala Leu Leu Leu Leu Pro Leu Leu Leu Leu 50 55 60

Pro Leu Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp
65 70 75

Leu Pro Ala Asp Leu Ala Phe Ala Val Arg Ala Leu Cys Cys Lys 80 85 90

Arg Ala Leu Arg Ala Arg Ala Leu Ala Ala Ala Ala Asp Pro 95 100 105

Glu Gly Pro Glu Gly Gly Cys Ser Leu Ala Trp Arg Leu Ala Glu 110 115 120

Leu Ala Gln Gln Arg Ala Ala His Thr Phe Leu Ile His Gly Ser 125 130 135

Arg Arg Phe Ser Tyr Ser Glu Ala Glu Arg Glu Ser Asn Arg Ala 140 145 150

Ala Arg Ala Phe Leu Arg Ala Leu Gly Trp Asp Trp Gly Pro Asp 155 160 165

Gly Gly Asp Ser Gly Glu Gly Ser Ala Gly Glu Gly Glu Arg Ala 170 175 180

Ala Pro Gly Ala Gly Asp Ala Ala Ala Gly Ser Gly Ala Glu Phe 185 190 195

Ala Gly Gly Asp Gly Ala Ala Arg Gly Gly Gly Ala Ala Pro
200 205 210

Leu	Ser	Pro	Gly	Ala 215	Thr	Val	Ala	Leu	Leu 220	Leu	Pro	Ala	Gly	Pro 225
Glu	Phe	Leu	Trp	Leu 230	Trp	Phe	Gly	Leu	Ala 235	Lys	Ala	Gly	Leu	Arg 240
Thr	Ala	Phe	Val	Pro 245	Thr	Ala	Leu	Arg	Arg 250	Gly	Pro	Leu	Leu	His 255
Суз	Leu	Arg	Ser	Cys 260	Gly	Ala	Arg	Ala	Leu 265	Val	Leu	Ala	Pro	Glu 270
Phe	Leu	Glu	Ser	Leu 275	Glu	Pro	Asp	Leu	Pro 280	Ala	Leu	Arg	Ala	Met 285
Gly	Leu	His	Leu	Trp 290	Ala	Ala	Gly	Pro	Gly 295	Thr	His	Pro	Ala	Gly 300
Ile	Ser	Asp	Leu	Leu 305	Ala	Glu	Val	Ser	Ala 310	Glu	Val	Asp	Gly	Pro 315
Val	Pro	Gly	Tyr	Leu 320	Ser	Ser	Pro	Gln	Ser 325	Ile	Thr	Asp	Thr	Cys 330
Leu	Tyr	Ile	Phe	Thr 335	Ser	Gly	Thr	Thr	Gly 340	Leu	Pro	Lys	Ala	Ala 345
Arg	Ile	Ser	His	Leu 350	Lys	Ile	Leu	Gln	Cys 355	Gln	Gly	Phe	Tyr	Gln 360
Leu	Суз	Gly	Val	His 365	Gln	Glu	Asp	Val	Ile 370	Tyr	Leu	Ala	Leu	Pro 375
Leu	Tyr	His	Met	Ser 380	Gly	Ser	Leu	Leu	Gly 385	Ile	Val	Gly	Cys	Met 390
Gly	Ile	Gly	Ala	Thr 395	Val	Val	Leu	Lys	Ser 400	Lys	Phe	Ser	Ala	Gly 405
Gln	Phe	Trp	Glu	Asp 410	Cys	Gln	Gln	His	Arg 415	Val	Thr	Val	Phe	Gln 420
Tyr	Ile	Gly	Glu	Leu 425	Cys	Arg	Tyr	Leu	Val 430	Asn	Gln	Pro	Pro	Ser 435
Lys	Ala	Glu	Arg	Gly 440	His	Lys	Val	Arg	Leu 445	Ala	Val	Gly	Ser	Gly 450
Leu	Arg	Pro	Asp	Thr 455		Glu	Arg	Phe	Val 460	Arg	Arg	Phe	Gly	Pro 465
Leu	Gln	Val	Leu	Glu 470		Tyr	Gly	Leu	Thr 475	Glu	Gly	Asn	Val	Ala 480
Thr	Ile	Asn	Tyr	Thr 485		Gln	Arg	Gly	Ala 490		Gly	Arg	Ala	Ser 495
Trp	Leu	Tyr	Lys	His	Ile	Phe	Pro	Phe	Ser	Leu	Ile	Arg	Tyr	Asp

					500					505					510
	Val	Thr	Thr	Gly	Glu 515	Pro	Ile	Arg	Asp	Pro 520	Gln	Gly	His	Cys	Met 525
	Ala	Thr	Ser	Pro	Gly 530	Glu	Pro	Gly	Leu	Leu 535	Val	Ala	Pro	Val	Ser 540
	Gln	Gln	Ser	Pro	Phe 545	Leu	Gly	Tyr	Ala	Gly 550	Gly	Pro	Glu	Leu	Ala 555
	Gln	Gly	Lys	Leu	Leu 560	Lys	Asp	Val	Phe	Arg 565	Pro	Gly	Asp	Val	Phe 570
	Phe	Asn	Thr	Gly	Asp 575	Leu	Leu	Val	Суз	Asp 580	Asp	Gln	Gly	Phe	Leu 585
	Arg	Phe	His	Asp	Arg 590	Thr	Gly	Asp	Thr	Phe 595	Arg	Trp	Lys	Gly	Glu 600
	Asn	Val	Ala	Thr	Thr 605	Glu	Val	Ala	Glu	Val 610	Phe	Glu	Ala	Leu	Asp 615
	Phe	Leu	Gln	Glu	Val 620	Asn	Val	Tyr	Gly	Val 625	Thr	Val	Pro	Gly	His 630
	Glu	Gly	Arg	Ala	Gly 635	Met	Ala	Ala	Leu	Val 640	Leu	Arg	Pro	Pro	His 645
	Ala	Leu	Asp	Leu	Met 650	Gln	Leu	Tyr	Thr	His 655	Val	Ser	Glu	Asn	Leu 660
	Pro	Pro	Tyr	Ala	Arg 665	Pro	Arg	Phe	Leu	Arg 670	Leu	Gln	Glu	Ser	Leu 675
:	Ala	Thr	Thr	Glu	Thr 680	Phe	Lys	Gln	Gln	Lys 685	Val	Arg	Met	Ala	Asn 690
	Glu	Gly	Phe	Asp	Pro 695	Ser	Thr	Leu	Ser	Asp 700	Pro	Leu	Tyr	Val	Leu 705
	Asp	Gln	Ala	Val	Gly 710	Ala	Tyr	Leu	Pro	Leu 715	Thr	Thr	Ala	Arg	Tyr 720
	Ser	Ala	Leu	Leu	Ala 725	Gly	Asn	Leu	Arg	Ile 730					
	<210: <211: <212: <213:	> 22 > DN <i>I</i>	£	cial	Sequ	1ence	€								
	<220 <223		nthe	tic o	oligo	onuc.	leoti	ide p	probe	€					
	<4002 gaga	> 103 agcca		gggct	tcca	cc tọ	g 22								

```
<210> 104
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 104
ggagaatgtg gccacaac 18
<210> 105
<211> 26
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 105
gccctggcac agtgactcca tagacg 26
<210> 106
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 106
atccacttca gcggacac 18
<210> 107
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 107
ccagtgccag gatacetete ttecceccag ageataacag acaeg 45
<210> 108
<211> 2579
<212> DNA
<213> Homo sapiens
<400> 108
cctgtgttaa gctgaggttt cccctagatc tcgtatatcc ccaacacata 50
cctccacgca cacacatccc caagaacctc gagctcacac caacagacac 100
acgcgcgcat acacactcgc tetegettgt ceatetecet eccgggggag 150
coggegegeg eteceacett tgccgcacac teeggegage egagecegea 200
```

gcgctccagg attctgcggc tcggaactcg gattgcagct ctgaaccccc 250 atggtggttt tttaaacact tcttttcctt ctcttcctcg ttttgattgc 300 accepttcca tctgggggct agaggagcaa ggcagcagcc ttcccagcca 350 gcccttgttg gcttgccatc gtccatctgg cttataaaag tttgctgagc 400 gcagtccaga gggctgcgct gctcgtcccc tcggctggca gaagggggtg 450 acgctgggca gcggcgagga gcgcgccgct gcctctggcg ggctttcggc 500 ttgaggggca aggtgaagag cgcaccggcc gtggggttta ccgagctgga 550 tttgtatgtt gcaccatgcc ttcttggatc ggggctgtga ttcttcccct 600 cttggggctg ctgctctccc tccccgccgg ggcggatgtg aaggctcgga 650 gctgcggaga ggtccgccag gcgtacggtg ccaagggatt cagcctggcg 700 gacatcccct accaggagat cgcaggggaa cacttaagaa tctgtcctca 750 ggaatataca tgctgcacca cagaaatgga agacaagtta agccaacaaa 800 gcaaactcga atttgaaaac cttgtggaag agacaagcca ttttgtgcgc 850 accacttttg tgtccaggca taagaaattt gacgaatttt tccgagagct 900 cctggagaat gcagaaaagt cactaaatga tatgtttgta cggacctatg 950 gcatgctgta catgcagaat tcagaagtct tccaggacct cttcacagag 1000 ctgaaaaggt actacactgg gggtaatgtg aatctggagg aaatgctcaa 1050 tgacttttgg gctcggctcc tggaacggat gtttcagctg ataaaccctc 1100 agtatcactt cagtgaagac tacctggaat gtgtgagcaa atacactgac 1150 cageteaage catttggaga egtgeeeegg aaactgaaga tteaggttae 1200 ccgcgccttc attgctgcca ggacctttgt ccaggggctg actgtgggca 1250 gagaagttgc aaaccgagtt tccaaggtca gcccaacccc agggtgtatc 1300 cgtgccctca tgaagatgct gtactgccca tactgtcggg ggcttcccac 1350 tgtgaggccc tgcaacaact actgtctcaa cgtcatgaag ggctgcttgg 1400 caaatcaggc tgacctcgac acagagtgga atctgtttat agatgcaatg 1450 ctcttggtgg cagagcgact ggaggggcca ttcaacattg agtcggtcat 1500 ggaccegata gatgtcaaga tttctgaage cattatgaac atgcaagaaa 1550 acagcatgca ggtgtctgca aaggtctttc agggatgtgg tcagcccaaa 1600 cctgctccag ccctcagatc tgcccgctca gctcctgaaa attttaatac 1650

acgtttcagg ccctacaatc ctgaggaaag accaacaact gctgcaggca 1700 caagcttgga ccggctggtc acagacataa aagagaaatt gaagctctct 1750 aaaaaggtct ggtcagcatt accctacact atctgcaagg acgagagcgt 1800 gacagcgggc acgtccaacg aggaggaatg ctggaacggg cacagcaaag 1850 ccagatactt gcctgagatc atgaatgatg ggctcaccaa ccagatcaac 1900 aatcccgagg tggatgtgga catcactcgg cctgacactt tcatcagaca 1950 gcagattatg gctctccgtg tgatgaccaa caaactaaaa aacgcctaca 2000 atggcaatga tgtcaatttc caggacacaa gtgatgaatc cagtggctca 2050 gggagtggca gtgggtgcat ggatgacgtg tgtcccacgg agtttgagtt 2100 tgtcaccaca gaggcccccg cagtggatcc cgaccggaga gaggtggact 2150 cttctgcagc ccagcgtggc cactccctgc tctcctggtc tctcacctgc 2200 attgtcctgg cactgcagag actgtgcaga taatcttggg tttttggtca 2250 gatgaaactg cattttagct atctgaatgg ccaactcact tcttttctta 2300 cactcttqqa caatggacca tgccacaaaa acttaccgtt ttctatgaga 2350 agagagcagt aatgcaatct gcctcccttt ttgttttccc aaagagtacc 2400 gggtgccaga ctgaactgct tcctctttcc ttcagctatc tgtggggacc 2450 ttgtttattc tagagagaat tcttactcaa atttttcgta ccaggagatt 2500 ttcttacctt catttgcttt tatgctgcag aagtaaagga atctcacgtt 2550 gtgagggttt tttttttctc atttaaaat 2579

<210> 109

<211> 555

<212> PRT

<213> Homo sapiens

<400> 109

Met Pro Ser Trp Ile Gly Ala Val Ile Leu Pro Leu Gly Leu 1 5 10 15

Leu Leu Ser Leu Pro Ala Gly Ala Asp Val Lys Ala Arg Ser Cys 20 25 30

Gly Glu Val Arg Gln Ala Tyr Gly Ala Lys Gly Phe Ser Leu Ala 35 40 45

Asp Ile Pro Tyr Gln Glu Ile Ala Gly Glu His Leu Arg Ile Cys
50 55 60

Pro Gln Glu Tyr Thr Cys Cys Thr Thr Glu Met Glu Asp Lys Leu 65 70 75

Ser Gln Gln Ser Lys Leu Glu Phe Glu Asn Leu Val Glu Glu Thr Ser His Phe Val Arg Thr Thr Phe Val Ser Arg His Lys Lys Phe 100 Asp Glu Phe Phe Arg Glu Leu Leu Glu Asn Ala Glu Lys Ser Leu 110 115 Asn Asp Met Phe Val Arg Thr Tyr Gly Met Leu Tyr Met Gln Asn Ser Glu Val Phe Gln Asp Leu Phe Thr Glu Leu Lys Arg Tyr Tyr Thr Gly Gly Asn Val Asn Leu Glu Glu Met Leu Asn Asp Phe Trp 160 Ala Arg Leu Leu Glu Arg Met Phe Gln Leu Ile Asn Pro Gln Tyr 175 His Phe Ser Glu Asp Tyr Leu Glu Cys Val Ser Lys Tyr Thr Asp 190 Gln Leu Lys Pro Phe Gly Asp Val Pro Arg Lys Leu Lys Ile Gln 205 Val Thr Arg Ala Phe Ile Ala Ala Arg Thr Phe Val Gln Gly Leu 215 220 Thr Val Gly Arg Glu Val Ala Asn Arg Val Ser Lys Val Ser Pro 235 Thr Pro Gly Cys Ile Arg Ala Leu Met Lys Met Leu Tyr Cys Pro 250 Tyr Cys Arg Gly Leu Pro Thr Val Arg Pro Cys Asn Asn Tyr Cys Leu Asn Val Met Lys Gly Cys Leu Ala Asn Gln Ala Asp Leu Asp Thr Glu Trp Asn Leu Phe Ile Asp Ala Met Leu Leu Val Ala Glu 290 295 Arg Leu Glu Gly Pro Phe Asn Ile Glu Ser Val Met Asp Pro Ile 305 310 Asp Val Lys Ile Ser Glu Ala Ile Met Asn Met Gln Glu Asn Ser 325 Met Gln Val Ser Ala Lys Val Phe Gln Gly Cys Gly Gln Pro Lys 335 Pro Ala Pro Ala Leu Arg Ser Ala Arg Ser Ala Pro Glu Asn Phe 355 Asn Thr Arg Phe Arg Pro Tyr Asn Pro Glu Glu Arg Pro Thr Thr

				365					370					375
Ala	Ala	Gly	Thr	Ser 380	Leu	Asp	Arg	Leu	Val 385	Thr	Asp	Ile	Lys	Glu 390
Lys	Leu	Lys	Leu	Ser 395	Lys	Lys	Val	Trp	Ser 400	Ala	Leu	Pro	Tyr	Thr 405
Ile	Cys	Lys	Asp	Glu 410	Ser	Val	Thr	Ala	Gly 415	Thr	Ser	Asn	Glu	Glu 420
Glu	Суз	Trp	Asn	Gly 425	His	Ser	Lys	Ala	Arg 430	Tyr	Leu	Pro	Glu	Ile 435
Met	Asn	Asp	Gly	Leu 440	Thr	Asn	Gln	Ile	Asn 445	Asn	Pro	Glu	Val	Asp 450
Val	Asp	Ile	Thr	Arg 455	Pro	Asp	Thr	Phe	Ile 460	Arg	Gln	Gln	Ile	Met 465
Ala	Leu	Arg	Val	Met 470	Thr	Asn	Lys	Leu	Lys 475	Asn	Ala	Tyr	Asn	Gly 480
Asn	Asp	Val	Asn	Phe 485	Gln	Asp	Thr	Ser	Asp 490	Glu	Ser	Ser	Gly	Ser 495
Gly	Ser	Gly	Ser	Gly 500	Cys	Met	Asp	Asp	Val 505	Cys	Pro	Thr	Glu	Phe 510
Glu	Phe	Val	Thr	Thr 515	Glu	Ala	Pro	Ala	Val 520	Asp	Pro	Asp	Arg	Arg 525
Glu	Val	Asp	Ser	Ser 530	Ala	Ala	Gln	Arg	Gly 535	His	Ser	Leu	Leu	Ser 540
Trp	Ser	Leu	Thr	Cys 545	Ile	Val	Leu	Ala	Leu 550	Gln	Arg	Leu	Cys	Arg 555
<210><211><211><212><213>	> 21 > DNZ	Ą	cial	Sequ	ience	è								
<220> <223>		nthet	ic c	oligo	nucl	.eoti	.de p	robe	:					
<400> aagc) aca g	ıcggg	ıcacç	ıt c	21								
<210> <211> <212> <213>	24 DNA	Ā	ial	Sequ	ence	:								
<220> <223>		thet	ic c	ligo	nucl	eoti	.de p	robe	•					
<400>	111													

```
tgcacagtct ctgcagtgcc cagg 24
<210> 112
<211> 40
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 112
gaatgctgga acgggcacag caaagccaga tacttgcctg 40
<210> 113
<211> 4649
<212> DNA
<213> Homo sapiens
<400> 113
cggacgcgtg ggcggacgcg tgggcaaaaq aactcggagt gccaaagcta 50
aataagttag ctgagaaaac qcacqcaqtt tqcaqcqcct qcqccqqqtq 100
 cgccaactac gcaaagacca agcgggctcc gcgcggaccg gccgcggggc 150
 tagggacccg gctttggcct tcaggctccc tagcagcggg gaaaaggaat 200
 tgctgcccgg agtttctgcg gaggtggagg gagatcagga aacggcttct 250
 tecteaette geegeetggt gagtgteggg gagattggea aaegeetagg 300
 aaaggactgg ggaaaatagc cctgggaaag tggagaaggt gatcaggagg 350
 tocacttogo agttotttoo aggtgtgggg accgcaggac agacggccga 450
 tecegeegee etecgtacea geacteceag gagagteage etegeteece 500
aacgtcgagg gcgctctggc cacgaaaagt tcctgtccac tgtgattctc 550
aattccttgc ttggtttttt tctccagaga acttttgggt ggagatatta 600
acttttttct ttttttttt ccttggtgga agctgctcta gggaggggg 650
aggaggagga gaaagtgaaa tgtgctggag aagaqcgagc cctccttqtt 700
cttccggagt cccatccatt aagccatcac ttctggaaga ttaaagttgt 750
cggacatggt gacagctgag aggagaggag gatttcttgc caggtggaga 800
gtcttcaccg tctgttgggt gcatgtgtgc gcccgcagcg gcgcggggcg 850
cgtggttctc cgcgtggagt ctcacctggg acctgagtga atggctccca 900
ggggctgtgc ggggcatccg cctccgcctt ctccacaggc ctgtgtctgt 950
cctggaaaga tgctagcaat gggggcgctg gcaggattct ggatcctctg 1000
```

cctcctcact tatggttacc tgtcctgggg ccaggcctta gaagaggagg 1050 aagaaggggc cttactagct caagctggag agaaactaga gcccagcaca 1100 acttccacct cccagcccca tctcattttc atcctagcgg atgatcaggg 1150 atttagagat gtgggttacc acggatctga gattaaaaca cctactcttg 1200 acaagctcgc tgccgaagga gttaaactgg agaactacta tgtccagcct 1250 atttgcacac catccaggag tcagtttatt actggaaagt atcagataca 1300 caccggactt caacattcta tcataagacc tacccaaccc aactgtttac 1350 ctctggacaa tgccacccta cctcagaaac tgaaggaggt tggatattca 1400 acgcatatgg tcggaaaatg gcacttgggt tttaacagaa aagaatgcat 1450 gcccaccaga agaggatttg ataccttttt tggttccctt ttgggaagtg 1500 gggattacta tacacactac aaatgtgaca gtcctgggat gtgtggctat 1550 gacttgtatg aaaacgacaa tgctgcctgg gactatgaca atggcatata 1600 ctccacacag atgtacactc agagagtaca gcaaatctta gcttcccata 1650 accccacaaa gcctatattt ttatatactg cctatcaagc tgttcattca 1700 ccactgcaag ctcctggcag gtatttcgaa cactaccgat ccattatcaa 1750 cataaacagg agaagatatg ctgccatgct ttcctgctta gatgaagcaa 1800 tcaacaacgt gacattggct ctaaagactt atggtttcta taacaacagc 1850 attatcattt actcttcaga taatggtggc cagcctacgg caggagggag 1900 taactggcct ctcagaggta gcaaaggaac atattgggaa ggagggatcc 1950 gggctgtagg ctttgtgcat agcccacttc tgaaaaacaa gggaacagtg 2000 tgtaaggaac ttgtgcacat cactgactgg taccccactc tcatttcact 2050 ggctgaagga cagattgatg aggacattca actagatggc tatgatatct 2100 gggagaccat aagtgagggt cttcgctcac cccgagtaga tattttgcat 2150 aacattgacc cctatacacc aaggcaaaaa atggctcctg ggcagcaggc 2200 tatgggatct ggaacactgc aatccagtca gccatcagag tgcagcactg 2250 gaaattgctt acaggaaatc ctggctacag cgactgggtc ccccctcagt 2300 ctttcagcaa cctgggaccg aaccggtggc acaatgaacg gatcaccttg 2350 tcaactggca aaagtgtatg gcttttcaac atcacagccg acccatatga 2400 gagggtggac ctatctaaca ggtatccagg aatcgtgaag aagctcctac 2450

ggaggctctc acagttcaac aaaactgcag tgccggtcag gtatcccccc 2500 aaagacccca gaagtaaccc taggctcaat ggaggggtct ggggaccatg 2550 gtataaagag gaaaccaaga aaaagaagcc aagcaaaaat caggctgaga 2600 aaaagcaaaa gaaaagcaaa aaaaagaaga agaaacaqca gaaaqcagtc 2650 tcaggtaaac cagcaaattt ggctcgataa tatcgctggc ctaagcgtca 2700 ggcttgtttt catgctgtgc cactccagag acttctgcca cctggccgcc 2750 acactgaaaa ctgtcctgct cagtgccaag gtgctactct tgcaagccac 2800 acttagagag agtggagatg tttatttctc tcqctccttt aqaaaacqtq 2850 gtgagtcctg agttccactg ctgtgcttca gtcaactgac caaacactgc 2900 tttgaattat aggaggagaa caataaccta ccatccqcaa qcatqctaat 2950 ttgatggaag ttacagggta gcatgattaa aactaccttt qataaattac 3000 agtcaaagat tgtgtcacct caaaggcctt gaagaatata ttttcttggt 3050 gaatttttgt atgtctgtca tatgacactt gggtttttta attaattcta 3100 ttttatatat ataaatatat gtttcttttc ctgtgaaaag ctgttttct 3150 cacatgtgaa cagcttgcac ctcattttac catgcgtgag ggaatggcaa 3200 ataagaatgt ttgagcacac tgcccacaat gaatgtaact attttctaaa 3250 cactttacta gaagaacatt tcagtataaa aaacctaatt tatttttaca 3300 gaaaaatatt ttgttgtttt tataaaaagt tatgcaaatg acttttattt 3350 caagcactgt aatactataa attaatgtaa tactgtgtga attcagacta 3450 taaaaaacat cattcagaaa actttataat cgtcattgtt caatcaagat 3500 tttgaatgta ataagatgaa tatatteett acaaattaet tggaaattea 3550 atgtttgtgc agagttgaga caactttatt gtttctatca taaactattt 3600 atgtatctta attattaaaa tgatttactt tatggcacta gaaaatttac 3650 tgtggctttt ctgatctaac ttctagctaa aattgtatca ttggtcctaa 3700 aaaataaaaa totttaotaa taggcaattg aaggaatggt ttgctaacaa 3750 ccacagtaat ataatatgat tttacagata gatgcttccc cttggctatg 3800 acatggagaa agattttccc ataataataa ctaatattta tattaggttg 3850 gtgcaaaact agttgcggtt tttcccatta aaagtaataa ccttactctt 3900

<210> 114

<211> 515

<212> PRT

<213> Homo sapiens

<400> 114

Met Ala Pro Arg Gly Cys Ala Gly His Pro Pro Pro Pro Ser Pro 1 5 10 15

Gln Ala Cys Val Cys Pro Gly Lys Met Leu Ala Met Gly Ala Leu 20 25 30

Ala Gly Phe Trp Ile Leu Cys Leu Leu Thr Tyr Gly Tyr Leu Ser 35 40 45

Trp Gly Gln Ala Leu Glu Glu Glu Glu Glu Gly Ala Leu Leu Ala
50 55 60

Gln Ala Gly Glu Lys Leu Glu Pro Ser Thr Thr Ser Thr Ser Gln
65 70 75

Pro His Leu Ile Phe Ile Leu Ala Asp Asp Gln Gly Phe Arg Asp 80 85 90

Val Gly Tyr His Gly Ser Glu Ile Lys Thr Pro Thr Leu Asp Lys 95 100 105

Leu Ala Ala Glu Gly Val Lys Leu Glu Asn Tyr Tyr Val Gln Pro

				110					115					120
Ile	Cys	Thr	Pro	Ser 125	Arg	Ser	Gln	Phe	Ile 130	Thr	Gly	Lys	Tyr	Gln 135
Ile	His	Thr	Gly	Leu 140	Gln	His	Ser	Ile	Ile 145	Arg	Pro	Thr	Gln	Pro 150
Asn	Cys	Leu	Pro	Leu 155	Asp	Asn	Ala	Thr	Leu 160	Pro	Gln	Lys	Leu	Lys 165
Glu	Val	Gly	Tyr	Ser 170	Thr	His	Met	Val	Gly 175	Lys	Trp	His	Leu	Gly 180
Phe	Asn	Arg	Lys	Glu 185	Cys	Met	Pro	Thr	Arg 190	Arg	Gly	Phe	Asp	Thr 195
Phe	Phe	Gly	Ser	Leu 200	Leu	Gly	Ser	Gly	Asp 205	Tyr	Tyr	Thr	His	Tyr 210
Lys	Cys	Asp	Ser	Pro 215	Gly	Met	Cys	Gly	Tyr 220	Asp	Leu	Tyr	Glu	Asn 225
Asp	Asn	Ala	Ala	Trp 230	Asp	Tyr	Asp	Asn	Gly 235	Ile	Tyr	Ser	Thr	Gln 240
Met	Tyr	Thr	Gln	Arg 245	Val	Gln	Gln	Ile	Leu 250	Ala	Ser	His	Asn	Pro 255
Thr	Lys	Pro	Ile	Phe 260	Leu	Tyr	Thr	Ala	Tyr 265	Gln	Ala	Val	His	Ser 270
Pro	Leu	Gln	Ala	Pro 275	Gly	Arg	Tyr	Phe	Glu 280	His	Tyr	Arg	Ser	Ile 285
Ile	Asn	Ile	Asn	Arg 290	Arg	Arg	Tyr	Ala	Ala 295	Met	Leu	Ser	Суз	Leu 300
Asp	Glu	Ala	Ile	Asn 305	Asn	Val	Thr	Leu	Ala 310	Leu	Lys	Thr	Tyr	Gly 315
Phe	Tyr	Asn	Asn	Ser 320	Ile	Ile	Ile	Tyr	Ser 325	Ser	Asp	Asn	Gly	Gly 330
Gln	Pro	Thr	Ala	Gly 335	Gly	Ser	Asn	Trp	Pro 340	Leu	Arg	Gly	Ser	Lys 345
Gly	Thr	Tyr	Trp	Glu 350	Gly	Gly	Ile	Arg	Ala 355	Val	Gly	Phe	Val	His 360
Ser	Pro	Leu	Leu	Lys 365	Asn	Lys	Gly	Thr	Val 370	Cys	Lys	Glu	Leu	Val 375
His	Ile	Thr	Asp	Trp 380	Tyr	Pro	Thr	Leu	Ile 385	Ser	Leu	Ala	Glu	Gly 390
Gln	Ile	Asp	Glu	Asp 395	Ile	Gln	Leu	Asp	Gly 400	Tyr	Asp	Ile	Trp	Glu 405

```
Thr Ile Ser Glu Gly Leu Arg Ser Pro Arg Val Asp Ile Leu His
                  410
 Asn Ile Asp Pro Tyr Thr Pro Arg Gln Lys Met Ala Pro Gly Gln
                                      430
 Gln Ala Met Gly Ser Gly Thr Leu Gln Ser Ser Gln Pro Ser Glu
                                      445
 Cys Ser Thr Gly Asn Cys Leu Gln Glu Ile Leu Ala Thr Ala Thr
                  455
 Gly Ser Pro Leu Ser Leu Ser Ala Thr Trp Asp Arg Thr Gly Gly
                  470
                                      475
 Thr Met Asn Gly Ser Pro Cys Gln Leu Ala Lys Val Tyr Gly Phe
                  485
 Ser Thr Ser Gln Pro Thr His Met Arg Gly Trp Thr Tyr Leu Thr
                  500
                                      505
 Gly Ile Gln Glu Ser
                  515
<210> 115
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 115
 cccaacccaa ctgtttacct ctgg 24
<210> 116
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 116
 ctctctgagt gtacatctgt gtgg 24
<210> 117
<211> 53
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<220>
<221> unsure
<222> 33
<223> unknown base
```

```
<400> 117
 gccaccctac ctcagaaact gaaggaggtt ggntattcaa cgcatatggt 50
 cgg 53
<210> 118
<211> 2260
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 2009, 2026, 2033, 2055, 2074, 2078, 2086
<223> unknown base
<400> 118
 cggacgcgtg ggtgcgagtg gagcggagga cccgagcggc tgaggagaga 50
 ggaggcggcg gcttagctgc tacggggtcc ggccggcgcc ctcccgaggg 100
 gggctcagga ggaggaagga ggacccgtgc gagaatgcct ctgccctgga 150
 gccttgcgct cccgctgctg ctctcctggg tggcaggtgg tttcgggaac 200
 gcggccagtg caaggcatca cgggttgtta gcatcggcac gtcagcctgg 250
 ggtctgtcac tatggaacta aactggcctg ctgctacqqc tqqaqaaqaa 300
 acagcaaggg agtctgtgaa gctacatgcg aacctggatg taagtttggt 350
 gagtgcgtgg gaccaaacaa atgcagatgc tttccaggat acaccgggaa 400
 aacctgcagt caagatgtga atgagtgtgg aatgaaaccc cggccatgcc 450
 aacacagatg tgtgaataca cacggaagct acaagtgctt ttgcctcagt 500
 ggccacatgc tcatgccaga tgctacgtgt gtgaactcta ggacatgtgc 550
 catgataaac tgtcagtaca gctgtgaaga cacagaagaa gggccacagt 600
gcctgtgtcc atcctcagga ctccgcctgg ccccaaatgg aagagactgt 650
ctagatattg atgaatgtgc ctctggtaaa gtcatctgtc cctacaatcg 700
aagatgtgtg aacacatttg gaagctacta ctgcaaatgt cacattggtt 750
tcgaactgca atatatcagt ggacgatatg actgtataga tataaatgaa 800
tgtactatgg atagccatac gtgcagccac catgccaatt gcttcaatac 850
ccaagggtcc ttcaagtgta aatgcaagca gggatataaa ggcaatggac 900
ttcggtgttc tgctatccct gaaaattctg tgaaggaagt cctcagagca 950
cctggtacca tcaaagacag aatcaagaag ttgcttqctc acaaaaacag 1000
```

catgaaaaag aaggcaaaaa ttaaaaatgt taccccagaa cccaccagga 1050

```
ctcctacccc taaggtgaac ttgcagccct tcaactatga agagatagtt 1100
tccagaggcg ggaactctca tggaggtaaa aaagggaatg aagagaaatg 1150
aaagaggggc ttgaggatga gaaaagagaa gagaaagccc tgaagaatga 1200
catagaggag cgaagcctgc gaggagatgt gtttttccct aaggtgaatg 1250
aagcaggtga attcggcctg attctggtcc aaaggaaagc gctaacttcc 1300
aaactggaac ataaagattt aaatatctcg gttgactgca gcttcaatca 1350
tgggatctgt gactggaaac aggatagaga agatgatttt gactggaatc 1400
ctgctgatcg agataatgct attggcttct atatggcagt tccggccttq 1450
gcaggtcaca agaaagacat tggccgattg aaacttctcc tacctgacct 1500
gcaaccccaa agcaacttct gtttgctctt tgattaccgg ctggccggag 1550
acaaagtcgg gaaacttcga gtgtttgtga aaaacagtaa caatgccctg 1600
gcatgggaga agaccacgag tgaggatgaa aagtggaaga cagggaaaat 1650
tcagttgtat caaggaactg atgctaccaa aagcatcatt tttgaagcag 1700
aacgtggcaa gggcaaaacc ggcgaaatcg cagtggatgg cgtcttgctt 1750
gtttcaggct tatgtccaga tagcctttta tctgtggatg actgaatgtt 1800
actatettta tatttgaett tgtatgteag tteeetggtt tttttgatat 1850
tgcatcatag gacctctggc attttagaat tactagctga aaaattgtaa 1900
tgtaccaaca gaaatattat tgtaagatgc ctttcttgta taagatatgc 1950
caatatttgc tttaaatatc atatcactgt atcttctcag tcatttctga 2000
atctttccnc attatattat aaaatntgga aangtcagtt tatctcccct 2050
cctcngtata tctgatttgt atangtangt tgatqnqctt ctctctacaa 2100
catttctaga aaatagaaaa aaaagcacag agaaatgttt aactgtttga 2150
ctcttatgat acttcttgga aactatgaca tcaaagatag acttttgcct 2200
aagtggctta gctgggtctt tcatagccaa acttgtatat ttaattcttt 2250
gtaataataa 2260
```

<210> 119

<211> 338

<212> PRT

<213> Homo sapiens

<400> 119

Met Pro Leu Pro Trp Ser Leu Ala Leu Pro Leu Leu Ser Trp

1 5 10 15

Val Ala Gly Gly Phe Gly Asn Ala Ala Ser Ala Arg His His Gly Leu Leu Ala Ser Ala Arg Gln Pro Gly Val Cys His Tyr Gly Thr Lys Leu Ala Cys Cys Tyr Gly Trp Arg Arg Asn Ser Lys Gly Val Cys Glu Ala Thr Cys Glu Pro Gly Cys Lys Phe Gly Glu Cys Val Gly Pro Asn Lys Cys Arg Cys Phe Pro Gly Tyr Thr Gly Lys Thr Cys Ser Gln Asp Val Asn Glu Cys Gly Met Lys Pro Arg Pro Cys 105 Gln His Arg Cys Val Asn Thr His Gly Ser Tyr Lys Cys Phe Cys 110 Leu Ser Gly His Met Leu Met Pro Asp Ala Thr Cys Val Asn Ser 125 130 135 Arg Thr Cys Ala Met Ile Asn Cys Gln Tyr Ser Cys Glu Asp Thr Glu Glu Gly Pro Gln Cys Leu Cys Pro Ser Ser Gly Leu Arg Leu 155 160 Ala Pro Asn Gly Arg Asp Cys Leu Asp Ile Asp Glu Cys Ala Ser 175 Gly Lys Val Ile Cys Pro Tyr Asn Arg Arg Cys Val Asn Thr Phe 190 Gly Ser Tyr Tyr Cys Lys Cys His Ile Gly Phe Glu Leu Gln Tyr Ile Ser Gly Arg Tyr Asp Cys Ile Asp Ile Asn Glu Cys Thr Met 220 Asp Ser His Thr Cys Ser His His Ala Asn Cys Phe Asn Thr Gln 235 Gly Ser Phe Lys Cys Lys Cys Lys Gln Gly Tyr Lys Gly Asn Gly Leu Arg Cys Ser Al'a Ile Pro Glu Asn Ser Val Lys Glu Val Leu 265 Arg Ala Pro Gly Thr Ile Lys Asp Arg Ile Lys Lys Leu Leu Ala 280 His Lys Asn Ser Met Lys Lys Lys Ala Lys Ile Lys Asn Val Thr Pro Glu Pro Thr Arg Thr Pro Thr Pro Lys Val Asn Leu Gln Pro

305 310 315

Phe Asn Tyr Glu Glu Ile Val Ser Arg Gly Gly Asn Ser His Gly 320 325 330

Gly Lys Lys Gly Asn Glu Glu Lys 335

<210> 120

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 120

cctcagtggc cacatgctca tg 22

<210> 121

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 121

ggctgcacgt atggctatcc atag 24

<210> 122

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 122

gataaactgt cagtacagct gtgaagacac agaagaaggg ccacagtgcc 50

<210> 123

<211> 1199

<212> DNA

<213> Homo sapiens

<400> 123

gggagctgct gctgtggctg ctggtgctgt gcgcgctgct cctgctcttg 50

gtgcagctgc tgcgcttcct gagggctgac ggcgacctga cgctactatg 100

ggccgagtgg cagggacgac gcccagaatg ggagctgact gatatggtgg 150

tgtgggtgac tggagcctcg agtggaattg gtgaggagct ggcttaccag 200

ttgtctaaac taggagtttc tcttgtgctg tcagccagaa gagtgcatga 250

gctggaaagg gtgaaaagaa gatgcctaga gaatggcaat ttaaaagaaa 300

aagatatact tgttttgccc cttgacctga ccgacactgg ttcccatgaa 350 gcggctacca aagctgttct ccaggagttt ggtagaatcg acattctggt 400 caacaatggt ggaatgtccc agcgttctct gtgcatggat accagcttgg 450 atgtctacag aaagctaata gagcttaact acttagggac ggtgtccttg 500 acaaaatgtg ttctgcctca catgatcgag aggaagcaag gaaagattgt 550 tactgtgaat agcatcctgg gtatcatatc tgtacctctt tccattggat 600 actgtgctag caagcatgct ctccggggtt tttttaatgg ccttcgaaca 650 gaacttgcca catacccagg tataatagtt tctaacattt gcccaggacc 700 tgtgcaatca aatattgtgg agaattccct agctggagaa gtcacaaaga 750 ctataggcaa taatggagac cagtcccaca agatgacaac cagtcgttgt 800 gtgcggctga tgttaatcag catggccaat gatttgaaag aagtttggat 850 ctcagaacaa cctttcttgt tagtaacata tttgtggcaa tacatgccaa 900 cctgggcctg gtggataacc aacaagatgg ggaagaaaag gattgagaac 950 tttaagagtg gtgtggatgc agactettet tattttaaaa tetttaagae 1000 aaaacatgac tgaaaagagc acctgtactt ttcaagccac tggagggaga 1050 aatggaaaac atgaaaacag caatcttctt atgcttctga ataatcaaag 1100 actaatttgt gattttactt tttaatagat atgactttgc ttccaacatg 1150 gaatgaaata aaaaataaat aataaaagat tgccatgaat cttgcaaaa 1199

<210> 124

<211> 289

<212> PRT

<213> Homo sapiens

<400> 124

Met Val Val Trp Val Thr Gly Ala Ser Ser Gly Ile Gly Glu Glu 1 5 10 15

Leu Ala Tyr Gln Leu Ser Lys Leu Gly Val Ser Leu Val Leu Ser 20 25 30

Ala Arg Arg Val His Glu Leu Glu Arg Val Lys Arg Arg Cys Leu $35 \hspace{1cm} 40 \hspace{1cm} 45$

Glu Asn Gly Asn Leu Lys Glu Lys Asp Ile Leu Val Leu Pro Leu 50 55 60

Asp Leu Thr Asp Thr Gly Ser His Glu Ala Ala Thr Lys Ala Val 65 70 75

Leu Gln Glu Phe Gly Arg Ile Asp Ile Leu Val Asn Asn Gly Gly

Met Ser Gln Arg Ser Leu Cys Met Asp Thr Ser Leu Asp Val Tyr Arg Lys Leu Ile Glu Leu Asn Tyr Leu Gly Thr Val Ser Leu Thr

115 120

Lys Cys Val Leu Pro His Met Ile Glu Arg Lys Gln Gly Lys Ile

Val Thr Val Asn Ser Ile Leu Gly Ile Ile Ser Val Pro Leu Ser 140

Ile Gly Tyr Cys Ala Ser Lys His Ala Leu Arg Gly Phe Phe Asn 155

Gly Leu Arg Thr Glu Leu Ala Thr Tyr Pro Gly Ile Ile Val Ser 170

Asn Ile Cys Pro Gly Pro Val Gln Ser Asn Ile Val Glu Asn Ser 190

Leu Ala Gly Glu Val Thr Lys Thr Ile Gly Asn Asn Gly Asp Gln 200

Ser His Lys Met Thr Thr Ser Arg Cys Val Arg Leu Met Leu Ile

Ser Met Ala Asn Asp Leu Lys Glu Val Trp Ile Ser Glu Gln Pro

Phe Leu Leu Val Thr Tyr Leu Trp Gln Tyr Met Pro Thr Trp Ala

Trp Trp Ile Thr Asn Lys Met Gly Lys Lys Arg Ile Glu Asn Phe 260

Lys Ser Gly Val Asp Ala Asp Ser Ser Tyr Phe Lys Ile Phe Lys 280

Thr Lys His Asp

<210> 125

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 125

gcaatgaact gggagctgc 19

<210> 126

<211> 19

<212> DNA

```
<213> Artificial Sequence
                 <220>
                 <223> Synthetic oligonucleotide probe
                 <400> 126
                     ctgtgaatag catcctggg 19
                 <210> 127
                 <211> 20
                 <212> DNA
                <213> Artificial Sequence
                 <220>
                 <223> Synthetic oligonucleotide probe
                 <400> 127
                    cttttcaagc cactggaggg 20
A REAL PROPERTY OF THE PROPERT
                <210> 128
                 <211> 24
                 <212> DNA
                 <213> Artificial Sequence
                 <223> Synthetic oligonucleotide probe
                 <400> 128
                    ctgtagacat ccaagctggt atcc 24
                <210> 129
                <211> 23
                 <212> DNA
                <213> Artificial Sequence
                <223> Synthetic oligonucleotide probe
                <400> 129
                    aagagtctgc atccacacca ctc 23
                <210> 130
                <211> 46
                <212> DNA
                <213> Artificial Sequence
                <223> Synthetic oligonucleotide probe
                <400> 130
                   acctgacgct actatgggcc gagtggcagg gacgacgccc agaatg 46
                <210> 131
                <211> 2365
                <212> DNA
                <213> Homo sapiens
```

<400> 131

gcgacgtggg caccgccatc agctgttcgc gcgtcttctc ctccaggtgg 50 ggcaggggtt tcgggctggt ggagcatgtg ctgggacagg acagcatcct 100 caatcaatcc aacagcatat tcggttgcat cttctacaca ctacagctat 150 tgttaggttg cctgcggaca cgctgggcct ctgtcctgat gctgctgagc 200 tccctggtgt ctctcgctgg ttctgtctac ctggcctgga tcctgttctt 250 cgtgctctat gatttctgca ttgtttgtat caccacctat gctatcaacg 300 tgagcctgat gtggctcagt ttccggaagg tccaagaacc ccagggcaag 350 gctaagaggc actgagccct caacccaagc caggctgacc tcatctgctt 400 tgctttggtc ttcaagccgc tcagcgtgcc tgtggacagc gtggccccgg 450 ccccccaag cctcaggagg gcaacacagt ccctggcgag tggccctggc 500 aggccagtgt gaggaggcaa ggagcccaca tctgcagcgg ctccctggtg 550 gcagacacct gggtcctcac tgctgcccac tgctttgaaa aggcagcagc 600 aacagaactg aattoctggt cagtggtcct gggttctctg cagcgtgagg 650 gactcagccc tggggccgaa gaggtggggg tggctgccct gcagttgccc 700 agggcctata accactacag ccagggctca gacctggccc tgctgcagct 750 egeceaeece acgaeecaca caceeetetg eetgeeecag eeegeecate 800 gcttcccctt tggagcctcc tgctgggcca ctggctggga tcaggacacc 850 agtgatgctc ctgggaccct acgcaatctg cgcctgcgtc tcatcagtcg 900 ccccacatgt aactgtatct acaaccagct gcaccagcga cacctgtcca 950 acceggeeeg geetgggatg etatgtgggg geeeceagee tggggtgeag 1000 ggcccctgtc agggagattc cgggggccct gtgctgtgcc tcgagcctga 1050 cggacactgg gttcaggctg gcatcatcag ctttgcatca agctgtgccc 1100 aggaggacgc tectgtgetg etgaceaaca cagetgetea cagtteetgg 1150 ctgcaggctc gagttcaggg ggcagctttc ctggcccaga gcccagagac 1200 cccggagatg agtgatgagg acagctgtgt agcctgtgga tccttgagga 1250 cagcaggtcc ccaggcagga gcaccetece catggecetg ggaggccagg 1300 ctgatgcacc agggacagct ggcctgtggc ggagccctgg tgtcagagga 1350 ggcggtgcta actgctgccc actgcttcat tgggcgccag gccccagagg 1400 aatggagcgt agggctgggg accagaccgg aggagtgggg cctgaagcag 1450

ctcatcctgc atggagccta cacccaccct gaggggggct acgacatggc 1500 cctcctgctg ctggcccagc ctgtgacact gggagccagc ctgcggcccc 1550 tetgeetgee ctateetgae caccacetge etgatgggga gegtggetgg 1600 gttctgggac gggcccgccc aggagcaggc atcagctccc tccaqacagt 1650 gcccgtgacc ctcctggggc ctagggcctg cagccggctg catgcagctc 1700 ctgggggtga tggcagccct attctgccgg ggatggtgtg taccagtgct 1750 gtgggtgagc tgcccagctg tgagggcctg tctggggcac cactggtgca 1800 tgaggtgagg ggcacatggt tcctggccgg gctgcacagc ttcggagatg 1850 cttgccaagg cccgccagg ccggcggtct tcaccgcgct ccctgcctat 1900 gaggactggg tcagcagttt ggactggcag gtctacttcg ccgaggaacc 1950 agagcccgag gctgagcctg gaagctgcct ggccaacata agccaaccaa 2000 ccagctgctg acaggggacc tggccattct caggacaaga qaatgcaggc 2050 aggcaaatgg cattactgcc cctgtcctcc ccaccctgtc atgtgtgatt 2100 ccaggcacca gggcaggccc agaagcccag cagctgtggg aaggaacctg 2150 cctggggcca caggtgccca ctccccaccc tgcaggacag gggtgtctgt 2200 ggacactece acacceaact etgetaceaa geaggegtet cagettteet 2250 cctcctttac tctttcagat acaatcacgc cagccacgtt gttttgaaaa 2300 tttcttttt tggggggcag cagttttcct ttttttaaac ttaaataaat 2350 tgttacaaaa taaaa 2365

<210> 132

<211> 571

<212> PRT

<213> Homo sapiens

<400> 132

Met Leu Leu Ser Ser Leu Val Ser Leu Ala Gly Ser Val Tyr Leu 1 5 10 15

Ala Trp Ile Leu Phe Phe Val Leu Tyr Asp Phe Cys Ile Val Cys 20 25 30

Ile Thr Thr Tyr Ala Ile Asn Val Ser Leu Met Trp Leu Ser Phe 35 40 45

Arg Lys Val Gln Glu Pro Gln Gly Lys Ala Lys Arg His Gly Asn 50 55 60

Thr Val Pro Gly Glu Trp Pro Trp Gln Ala Ser Val Arg Arg Gln 65 70 75

Gly Ala His Ile Cys Ser Gly Ser Leu Val Ala Asp Thr Trp Val Leu Thr Ala Ala His Cys Phe Glu Lys Ala Ala Ala Thr Glu Leu Asn Ser Trp Ser Val Val Leu Gly Ser Leu Gln Arg Glu Gly Leu 110 115 Ser Pro Gly Ala Glu Glu Val Gly Val Ala Ala Leu Gln Leu Pro 125 130 Arg Ala Tyr Asn His Tyr Ser Gln Gly Ser Asp Leu Ala Leu Leu 140 145 Gln Leu Ala His Pro Thr Thr His Thr Pro Leu Cys Leu Pro Gln 155 Pro Ala His Arg Phe Pro Phe Gly Ala Ser Cys Trp Ala Thr Gly 175 Trp Asp Gln Asp Thr Ser Asp Ala Pro Gly Thr Leu Arg Asn Leu 190 Arg Leu Arg Leu Ile Ser Arg Pro Thr Cys Asn Cys Ile Tyr Asn Gln Leu His Gln Arg His Leu Ser Asn Pro Ala Arg Pro Gly Met 220 Leu Cys Gly Gly Pro Gln Pro Gly Val Gln Gly Pro Cys Gln Gly 235 Asp Ser Gly Gly Pro Val Leu Cys Leu Glu Pro Asp Gly His Trp 250 Val Gln Ala Gly Ile Ile Ser Phe Ala Ser Ser Cys Ala Gln Glu 265 Asp Ala Pro Val Leu Leu Thr Asn Thr Ala Ala His Ser Ser Trp 280 285 Leu Gln Ala Arg Val Gln Gly Ala Ala Phe Leu Ala Gln Ser Pro 295 Glu Thr Pro Glu Met Ser Asp Glu Asp Ser Cys Val Ala Cys Gly 310 Ser Leu Arg Thr Ala Gly Pro Gln Ala Gly Ala Pro Ser Pro Trp Pro Trp Glu Ala Arg Leu Met His Gln Gly Gln Leu Ala Cys Gly Gly Ala Leu Val Ser Glu Glu Ala Val Leu Thr Ala Ala His Cys 355 Phe Ile Gly Arg Gln Ala Pro Glu Glu Trp Ser Val Gly Leu Gly

				365					370					375
Thr	Arg	Pro	Glu	Glu 380	Trp	Gly	Leu	Lys	Gln 385	Leu	Ile	Leu	His	Gly 390
Ala	Tyr	Thr	His	Pro 395	Glu	Gly	Gly	Tyr	Asp 400	Met	Ala	Leu	Leu	Leu 405
Leu	Ala	Gln	Pro	Val 410	Thr	Leu	Gly	Ala	Ser 415	Leu	Arg	Pro	Leu	Cys 420
Leu	Pro	Tyr	Pro	Asp 425	His	His	Leu	Pro	Asp 430	Gly	Glu	Arg	Gly	Trp 435
Val	Leu	Gly	Arg	Ala 440	Arg	Pro	Gly	Ala	Gly 445	Ile	Ser	Ser	Leu	Gln 450
Thr	Val	Pro	Val	Thr 455	Leu	Leu	Gly	Pro	Arg 460	Ala	Суз	Ser	Arg	Leu 465
His	Ala	Ala	Pro	Gly 470	Gly	Asp	Gly	Ser	Pro 475	Ile	Leu	Pro	Gly	Met 480
Val	Cys	Thr	Ser	Ala 485	Val	Gly	Glu	Leu	Pro 490	Ser	Cys	Glu	Gly	Leu 495
Ser	Gly	Ala	Pro	Leu 500	Val	His	Glu	Val	Arg 505	Gly	Thr	Trp	Phe	Leu 510
Ala	Gly	Leu	His	Ser 515	Phe	Gly	Asp	Ala	Cys 520	Gln	Gly	Pro	Ala	Arg 525
Pro	Ala	Val	Phe	Thr 530	Ala	Leu	Pro	Ala	Tyr 535	Glu	Asp	Trp	Val	Ser 540
Ser	Leu	Asp	Trp	Gln 545	Val	Tyr	Phe	Ala	Glu 550	Glu	Pro	Glu	Pro	Glu 555
Ala	Glu	Pro	Gly	Ser 560	Cys	Leu	Ala	Asn	Ile 565	Ser	Gln	Pro	Thr	Ser 570
Суѕ														
<210><211><211><212><213>	> 24 > DN <i>F</i>	Ā	cial	Sequ	ience)								
<220> <223>		nthet	ic c	oligo	nucl	.eoti	.de p	robe	è					
<400> cctg		gt g	gcctc	gago	c to	gac 2	:4							
<210><211><211><212>	24													

```
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 134
gtgggcagca gttagcaccg cctc 24
<210> 135
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 135
 ggctggcatc atcagctttg catcaagctg tgcccaggag gacgc 45
<210> 136
<211> 1998
<212> DNA
<213> Homo sapiens
<400> 136
 cgggccgccc ccggccccca ttcgggccgg gcctcgctgc ggcggcgact 50
 gagccaggct gggccgcgtc cctgagtccc agagtcggcg cggcgcggca 100
 ggggcagcct tccaccacgg ggagcccagc tgtcagccgc ctcacaggaa 150
 gatgctgcgt cggcggggca gccctggcat gggtgtgcat gtgggtgcag 200
 ccctgggagc actgtggttc tgcctcacag gagccctgga ggtccaggtc 250
cctgaagacc cagtggtggc actggtgggc accgatgcca ccctgtgctg 300
ctccttctcc cctgagcctg gcttcagcct ggcacagctc aacctcatct 350
ggcagctgac agataccaaa cagctggtgc acagctttgc tgagggccag 400
gaccagggca gcgcctatgc caaccgcacg gccctcttcc cggacctgct 450
ggcacagggc aacgcatccc tgaggctgca gcgcgtgcgt gtggcggacg 500
agggcagett cacetgette gtgageatee gggatttegg cagegetgee 550
gtcagcctgc aggtggccgc tccctactcg aagcccagca tgaccctgga 600
gcccaacaag gacctgcggc caggggacac ggtgaccatc acgtgctcca 650
gctaccaggg ctaccctgag gctgaggtgt tctggcagga tgggcagggt 700
gtgcccctga ctggcaacgt gaccacgtcg cagatggcca acgagcaggg 750
cttgtttgat gtgcacagcg tcctgcgggt ggtgctgggt gcgaatggca 800
cctacagctg cctggtgcgc aaccccgtgc tgcagcagga tgcgcacrgc 850
```

```
totgtcacca tcacagggca gcctatgaca ttccccccag aggccctgtg 900
 ggtgaccgtg gggctgtctg tctgtctcat tgcactgctg gtggccctgg 950
 ctttcgtgtg ctggagaaag atcaaacaga gctgtgagga ggagaatgca 1000
 ggagctgagg accaggatgg ggagggagaa ggctccaaga cagccctgca 1050
 gcctctgaaa cactctgaca gcaaagaaga tgatggacaa gaaatagcct 1100
 gaccatgagg accagggagc tgctacccct ccctacagct cctaccctct 1150
 ggctgcaatg gggctgcact gtgagccctg cccccaacag atgcatcctg 1200
 ctctgacagg tgggctcctt ctccaaagga tgcgatacac agaccactgt 1250
 gcagccttat ttctccaatg gacatgattc ccaagtcatc ctgctgcctt 1300
 ttttcttata gacacaatga acagaccacc cacaacctta gttctctaag 1350
 tcatcctgcc tgctgcctta tttcacaqta catacatttc ttaqqqacac 1400
 agtacactga ccacatcacc accetettet tecagtgetg cgtggaccat 1450
 ctggctgcct tttttctcca aaagatgcaa tattcagact qactgacccc 1500
 ctgccttatt tcaccaaaga cacgatgcat agtcaccccg qccttgtttc 1550
 tccaatggcc gtgatacact agtgatcatg ttcagccctg cttccacctg 1600
 catagaatct tttcttctca gacagggaca gtgcggcctc aacatctcct 1650
 ggagtctaga agctgtttcc tttcccctcc ttcctccctg ccccaagtga 1700
 agacagggca gggccaggaa tgctttgggg acaccgaggg gactgccccc 1750
 cacccccacc atggtgctat tetggggetg gggeagtett tteetggett 1800
 gcctctggcc agctcctggc ctctggtaga gtgagacttc agacgttctg 1850
 atgccttccg gatgtcatct ctccctgccc caggaatgga agatgtgagg 1900
 acttctaatt taaatgtggg actcggaggg attttgtaaa ctgggggtat 1950
 attttgggga aaataaatgt ctttgtaaaa aaaaaaaaa aaaaaaaa 1998
<210> 137
<211> 316
<212> PRT
<213> Homo sapiens
<220>
<221> unsure
<223> unknown amino acid
```

<222> 233

<400> 137

Met Leu Arg Arg Gly Ser Pro Gly Met Gly Val His Val Gly

1				5					10					15
Ala	Ala	Leu	Gly	Ala 20	Leu	Trp	Phe	Cys	Leu 25	Thr	Gly	Ala	Leu	Glu 30
Val	Gln	Val	Pro	Glu 35	Asp	Pro	Val	Val	Ala 40	Leu	Val	Gly	Thr	Asp 45
Ala	Thr	Leu	Cys	Cys 50	Ser	Phe	Ser	Pro	Glu 55	Pro	Gly	Phe	Ser	Leu 60
Ala	Gln	Leu	Asn	Leu 65	Ile	Trp	Gln	Leu	Thr 70	Asp	Thr	Lys	Gln	Leu 75
Val	His	Ser	Phe	Ala 80	Glu	Gly	Gln	Asp	Gln 85	Gly	Ser	Ala	Tyr	Ala 90
Asn	Arg	Thr	Ala	Leu 95	Phe	Pro	Asp	Leu	Leu 100	Ala	Gln	Gly	Asn	Ala 105
Ser	Leu	Arg	Leu	Gln 110	Arg	Val	Arg	Val	Ala 115	Asp	Glu	Gly	Ser	Phe 120
Thr	Cys	Phe	Val	Ser 125	Ile	Arg	Asp	Phe	Gly 130	Ser	Ala	Ala	Val	Ser 135
Leu	Gln	Val	Ala	Ala 140	Pro	Tyr	Ser	Lys	Pro 145	Ser	Met	Thr	Leu	Glu 150
Pro	Asn	Lys	Asp	Leu 155	Arg	Pro	Gly	Asp	Thr 160	Val	Thr	Ile	Thr	Cys 165
Ser	Ser	Tyr	Gln	Gly 170	Tyr	Pro	Glu	Ala	Glu 175	Val	Phe	Trp	Gln	Asp 180
Gly	Gln	Gly	Val	Pro 185	Leu	Thr	Gly	Asn	Val 190	Thr	Thr	Ser	Gln	Met 195
Ala	Asn	Glu	Gln	Gly 200	Leu	Phe	Asp	Val	His 205	Ser	Val	Leu	Arg	Val 210
Val	Leu	Gly		Asn 215	Gly	Thr	Tyr	Ser	Cys 220	Leu	Val	Arg	Asn	Pro 225
Val	Leu	Gln	Gln	Asp 230	Ala	His	Xaa	Ser	Val 235	Thr	Ile	Thr	Gly	Gln 240
Pro	Met	Thr	Phe	Pro 245	Pro	Glu	Ala	Leu	Trp 250	Val	Thr	Val	Gly	Leu 255
Ser	Val	Cys	Leu	Ile 260	Ala	Leu	Leu	Val	Ala 265	Leu	Ala	Phe	Val	Cys 270
Trp	Arg	Lys	Ile	Lys 275	Gln	Ser	Cys	Glu	Glu 280	Glu	Asn	Ala	Gly	Ala 285
Glu	Asp	Gln	Asp	Gly 290	Glu	Gly	Glu	Gly	Ser 295	Lys	Thr	Ala	Leu	Gln 300

```
Pro Leu Lys His Ser Asp Ser Lys Glu Asp Asp Gly Gln Glu Ile
                                      310
                 305
Ala
<210> 138
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 138
ctggcacage tcaacctcat ctgg 24
<210> 139
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 139
 gctgtctgtc tgtctcattg 20
<210> 140
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 140
 ggacacagta tactgaccac 20
<210> 141
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 141
 tgcgaaccag gcagctgtaa gtgc 24
<210> 142
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
```

```
<400> 142
 tggaagaaga gggtggtgat gtgg 24
<210> 143
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 143
 cagetgacag acaceaaaca getggtgcae agttteaceg aagge 45
<210> 144
<211> 2336
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 1620, 1673
<223> unknown base
<400> 144
 ttcgtgaccc ttgagaaaag agttggtggt aaatgtgcca cgtcttctaa 50
 gaagggggag tcctgaactt gtctgaagcc cttgtccgta agccttgaac 100
 tacqttctta aatctatgaa gtcgagggac ctttcgctgc ttttgtaggg 150
 acttctttcc ttgcttcagc aacatgaggc ttttcttgtg gaacgcggtc 200
 ttgactctgt tcgtcacttc tttgattggg gctttgatcc ctgaaccaga 250
 agtgaaaatt gaagttotoo agaagcoatt catotgocat cgcaagacca 300
 aaggagggga tttgatgttg gtccactatg aaggctactt agaaaaggac 350
 ggctccttat ttcactccac tcacaaacat aacaatggtc agcccatttg 400
 gtttaccctg ggcatcctgg aggctctcaa aggttgggac cagggcttga 450
 aaggaatgtg tgtaggagag aagagaaagc tcatcattcc tcctgctctg 500
 ggctatggaa aagaaggaaa aggtaaaatt cccccagaaa gtacactgat 550
 atttaatatt gatctcctgg agattcgaaa tggaccaaga tcccatgaat 600
 cattccaaga aatggatctt aatgatgact ggaaactctc taaagatgag 650
 gttaaagcat atttaaagaa ggagtttgaa aaacatggtg cggtggtgaa 700
 tgaaagtcat catgatgctt tggtggagga tatttttgat aaagaagatg 750
 aagacaaaga tgggtttata tctgccagag aatttacata taaacacgat 800
```

gagttataga gatacatcta cocttttaat atagcactca totttcaaga 850

gagggcagtc atctttaaag aacattttat ttttatacaa tgttctttct 900 tgctttgttt tttattttta tatattttt ctgactccta tttaaagaac 950 cccttaggtt tctaagtacc catttctttc tgataagtta ttgggaagaa 1000 aaagctaatt ggtctttgaa tagaagactt ctggacaatt tttcactttc 1050 acagatatga agctttgttt tactttctca cttataaatt taaaatgttg 1100 caactqqqaa tataccacqa catqaqacca ggttatagca caaattagca 1150 ccctatattt ctgcttccct ctattttctc caagttagag gtcaacattt 1200 gaaaagcctt ttgcaatagc ccaaggcttg ctattttcat gttataatga 1250 aatagtttat gtgtaactgg ctctgagtct ctgcttgagg accagaggaa 1300 aatggttgtt ggacctgact tgttaatggc tactgcttta ctaaggagat 1350 qtqcaatqct gaaqttaqaa acaaqqttaa taqccaqqca tgqtqqctca 1400 tgcctgtaat cccagcactt tgggaggctg aggcgggcgg atcacctgag 1450 gttgggagtt cgagaccage ctgaccaaca cggagaaacc ctatctctac 1500 taaaaataca aagtagcccg gcgtggtgat gcgtgcctgt aatcccagct 1550 acccaggaag gctgaggcgg cagaatcact tgaacccgag gccgaggttg 1600 cggtaagccg agatcacctn cagcctggac actctgtctc gaaaaaagaa 1650 aagaacacgg ttaataccat atnaatatgt atgcattgag acatgctacc 1700 taggacttaa gctgatgaag cttggctcct agtgattggt ggcctattat 1750 gataaatagg acaaatcatt tatgtgtgag tttctttgta ataaaatgta 1800 tcaatatgtt atagatgagg tagaaagtta tatttatatt caatatttac 1850 ttcttaaggc tagcggaata tccttcctgg ttctttaatg ggtagtctat 1900 agtatattat actacaataa cattgtatca taagataaag tagtaaacca 1950 gtctacattt tcccatttct gtctcatcaa aaactgaagt tagctgggtg 2000 tggtggctca tgcctgtaat cccagcactt tgggggccaa ggagggtgga 2050 tcacttgaga tcaggagttc aagaccagcc tggccaacat ggtgaaacct 2100 tgtctctact aaaaatacaa aaattagcca ggcgtggtgg tgcacacctg 2150 tagtcccagc tactcgggag gctgagacag gagatttgct tgaacccggg 2200 aggeggaggt tgeagtgage caagattgtg ceaetgeact ceageetggg 2250 tgacagagca agactccatc tcaaaaaaaaa aaaaaagaag cagacctaca 2300

```
qcaqctacta ttgaataaat acctatcctg gatttt 2336
```

```
<210> 145
```

<213> Homo sapiens

<400> 145

Met Arg Leu Phe Leu Trp Asn Ala Val Leu Thr Leu Phe Val Thr 1 5 10 15

Ser Leu Ile Gly Ala Leu Ile Pro Glu Pro Glu Val Lys Ile Glu 20 25 30

Val Leu Gln Lys Pro Phe Ile Cys His Arg Lys Thr Lys Gly Gly 35 40 45

Asp Leu Met Leu Val His Tyr Glu Gly Tyr Leu Glu Lys Asp Gly 50 55

Ser Leu Phe His Ser Thr His Lys His Asn Asn Gly Gln Pro Ile 65 70 75

Trp Phe Thr Leu Gly Ile Leu Glu Ala Leu Lys Gly Trp Asp Gln 80 85 90

Gly Leu Lys Gly Met Cys Val Gly Glu Lys Arg Lys Leu Ile Ile 95 100 105

Pro Pro Ala Leu Gly Tyr Gly Lys Glu Gly Lys Gly Lys Ile Pro 110 115 120

Pro Glu Ser Thr Leu Ile Phe Asn Ile Asp Leu Leu Glu Ile Arg 125 130 135

Asn Gly Pro Arg Ser His Glu Ser Phe Gln Glu Met Asp Leu Asn 140 145 150

Asp Asp Trp Lys Leu Ser Lys Asp Glu Val Lys Ala Tyr Leu Lys 155 160 165

Lys Glu Phe Glu Lys His Gly Ala Val Val Asn Glu Ser His His
170 175 180

Asp Ala Leu Val Glu Asp Ile Phe Asp Lys Glu Asp Glu Asp Lys 185 190 190

Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His Asp Glu 200 205 210

Leu

<210> 146

<211> 26

<212> DNA

<213> Artificial Sequence

<211> 211

```
<220>
<223> Synthetic oligonucleotide probe
<400> 146
ctttccttqc ttcagcaaca tgaggc 26
<210> 147
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 147
 gcccagagca ggaggaatga tgagc 25
<210> 148
<211> 49
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 148
 gtggaacgcg gtcttgactc tgttcgtcac ttctttgatt ggggctttg 49
<210> 149
<211> 2196
<212> DNA
<213> Homo sapiens
<400> 149
 aataaagctt ccttaatgtt gtatatgtct ttgaagtaca tccgtgcatt 50
 tttttttagc atccaaccat tcctcccttg tagttctcgc cccctcaaat 100
 caccetetee egtageecae eegactaaca teteagtete tgaaaatgea 150
 cagagatgcc tggctacctc gccctgcctt cagcctcacg gggctcagtc 200
 tctttttctc tttggtgcca ccaggacgga gcatggaggt cacagtacct 250
 gccaccetca acgtectcaa tggetetgae gecegeetge eetgeacett 300
 caactcctgc tacacagtga accacaaaca gttctccctg aactggactt 350
 accaggagtg caacaactgc totgaggaga tgttcctcca gttccgcatg 400
 aagatcatta acctgaagct ggagcggttt caagaccgcg tggagttctc 450
 agggaacccc agcaagtacg atgtgtcggt gatgctgaga aacgtgcagc 500
  cggaggatga ggggatttac aactgctaca tcatgaaccc ccctgaccgc 550
  caccgtggcc atggcaagat ccatctgcag gtcctcatgg aagagccccc 600
```

tgagcgggac tccacggtgg ccgtgattgt gggtgcctcc gtcgggggct 650 tcctggctgt ggtcatcttg gtgctgatgg tggtcaagtg tgtgaggaga 700 aaaaaagagc agaagctgag cacagatgac ctgaagaccg aggaggaggg 750 caagacggac ggtgaaggca acccggatga tggcgccaag tagtgggtgg 800 ccggccctgc agcctcccgt gtcccgtctc ctcccctctc cgccctgtac 850 agtgaccetg cetgeteget ettggtgtge ttecegtgae etaggacece 900 agggeecace tggggeetee tgaaceeeeg acttegtate teccaceetg 950 caccaagagt gacccactct cttccatccg agaaacctgc catgctctgg 1000 gacgtgtggg ccctggggag aggagagaaa gggctcccac ctgccagtcc 1050 ctggggggag gcaggaggca catgtgaggg tccccagaga gaagggagtg 1100 ggtgggcagg ggtagaggag gggccgctgt cacctgccca gtgcttgcct 1150 ggcagtggct tcagagagga cctggtgggg agggagggct ttcctgtgct 1200 gacagcgctc cctcaggagg gccttggcct ggcacggctg tgctcctccc 1250 ctgctcccag cccagagcag ccatcaggct ggaggtgacg atgagttcct 1300 gaaacttgga ggggcatgtt aaagggatga ctgtgcattc cagggcactg 1350 acggaaagcc agggctgcag gcaaagctgg acatgtgccc tggcccagga 1400 ggccatgttg ggccctcgtt tccattgcta gtggcctcct tggggctcct 1450 gttggctcct aatcccttag gactgtggat gaggccagac tggaagagca 1500 gctccaggta gggggccatg tttcccagcg gggacccacc aacagaggcc 1550 agtttcaaag tcagctgagg ggctgagggg tggggctcca tggtgaatgc 1600 aggttgctgc aggctctgcc ttctccatgg ggtaaccacc ctcgcctggg 1650 caggggcagc caaggctggg aaatgaggag gccatgcaca gggtggggca 1700 gctttctttg gggcttcagt gagaactctc ccagttgccc ttggtggggt 1750 ttccacctgg cttttggcta cagagaggga agggaaagcc tgaggccggc 1800 ataaggggag gccttggaac ctgagctgcc aatgccagcc ctgtcccatc 1850 tgcggccacg ctactcgctc ctctcccaac aactcccttc gtggggacaa 1900 aagtgacaat tgtaggccag gcacagtggc tcacgcctgt aatcccagca 1950 ctttgggagg ccaaggcggg tggattacct ccatctgttt agtagaaatg 2000 ggcaaaaccc catctctact aaaaatacaa gaattagctg ggcgtggtgg 2050

cgtgtgcctg taatcccagc tatttgggag gctgaggcag gagaatcgct 2100 tgagcccggg aagcagaggt tgcagtgaac tgagatagtg atagtgccac 2150 tgcaattcag cctgggtgac atagagagac tccatctcaa aaaaaa 2196

<210> 150

<211> 215

<212> PRT

<213> Homo sapiens

<400> 150

Met His Arg Asp Ala Trp Leu Pro Arg Pro Ala Phe Ser Leu Thr
1 5 10 15

Gly Leu Ser Leu Phe Phe Ser Leu Val Pro Pro Gly Arg Ser Met 20 25 30

Glu Val Thr Val Pro Ala Thr Leu Asn Val Leu Asn Gly Ser Asp 35 40 45

Ala Arg Leu Pro Cys Thr Phe Asn Ser Cys Tyr Thr Val Asn His 50 55 60

Lys Gln Phe Ser Leu Asn Trp Thr Tyr Gln Glu Cys Asn Asn Cys
65 70 75

Ser Glu Glu Met Phe Leu Gln Phe Arg Met Lys Ile Ile Asn Leu 80 85 90

Lys Leu Glu Arg Phe Gln Asp Arg Val Glu Phe Ser Gly Asn Pro 95 100 105

Ser Lys Tyr Asp Val Ser Val Met Leu Arg Asn Val Gln Pro Glu 110 115 120

Asp Glu Gly Ile Tyr Asn Cys Tyr Ile Met Asn Pro Pro Asp Arg 125 130 135

His Arg Gly His Gly Lys Ile His Leu Gln Val Leu Met Glu Glu
140 145 150

Pro Pro Glu Arg Asp Ser Thr Val Ala Val Ile Val Gly Ala Ser 155 160 165

Val Gly Gly Phe Leu Ala Val Val Ile Leu Val Leu Met Val Val 170 175 180

Lys Cys Val Arg Arg Lys Lys Glu Gln Lys Leu Ser Thr Asp Asp 185

Leu Lys Thr Glu Glu Glu Gly Lys Thr Asp Gly Glu Gly Asn Pro
200 205 210

Asp Asp Gly Ala Lys 215

<210> 151

```
<211> 524
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 103, 233
<223> unknown base
<400> 151
 gttgtatatg tcctgaagta catccgtgca ttttttttag catccaacca 50
 tectecettg tagttetege ecceteaaat cacettetee ettageceae 100
 conactaaca totoagtoto tgaaaatgca cagagatgco tggotacoto 150
 gccctqcctt cagcctcacg gggctcagtc tctttttctc tttggtgcca 200
 ccaggacgga gcatggaggt ccacagtacc tgnccaccct caacgtcctc 250
 aatggctctg acgcccgcct gccctgccct tcaactcctg ctacacagtg 300
 aaccacaaac agttctccct gaactggact taccaggagt gcaacaactg 350
 ctctgaggag atgttcctcc agttccgcat gaagatcatt aacctgaagc 400
 tggagcggtt tcaagaccgc gtggagttct cagggaaccc cagcaagtac 450
 gatgtgtcgg tgatgctgag aaacgtgcag ccggaggatg aggggattta 500
 caactgctac atcatgaacc cccc 524
<210> 152
<211> 368
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 56, 123
<223> unknown base
<400> 152
 tcacqqqqct catctcttt tctctttqqt qcccaccaqq acqqaqcatg 50
 gaggtncaca tacctgccac cctcaacgtc ctcaatggct ttgacgcccg 100
 cctgccctgc accttcaact ccngctacac agtgaaccac aaacagttct 150
 ccctgaactg gatttaccag gagtgcaaca actggctctg aggagatgtt 200
 cctccagttc ccgcatggaa gatcatttaa cctgaaagct ggaagcggtt 250
 ttcaagaacc gcgtggaagt ttctcaggga accccagcaa gtacgatgtg 300
 teggtgatge tgagaaacgt geageeggag gatgagggga tttacaactg 350
```

ctacatcatg aacccccc 368

```
<210> 153
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 153
 acggagcatg gaggtccaca gtac 24
<210> 154
<211> 23
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 154
gcacgtttct cagcatcacc gac 23
<210> 155
<211> 50
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 155
cgcctgccct gcaccttcaa ctcctgctac acagtgaacc acaaacagtt 50
<210> 156
<211> 2680
<212> DNA
<213> Homo sapiens
<400> 156
 tgcggcgacc gtcgtacacc atgggcctcc acctccgccc ctaccgtgtg 50
 gggctgctcc cggatggcct cctgttcctc ttgctgctgc taatgctgct 100
 cgcggaccca gcgctcccgg ccggacgtca cccccaqtg qtqctqgtcc 150
 ctggtgattt gggtaaccaa ctggaagcca agctggacaa gccgacagtg 200
 gtgcactacc tctgctccaa gaagaccgaa agctacttca caatctggct 250
 gaacctggaa ctgctgctgc ctgtcatcat tgactgctgg attgacaata 300
 tcaggctggt ttacaacaaa acatccaggg ccacccagtt tcctgatggt 350
 gtggatgtac gtgtccctgg ctttgggaag accttctcac tggagttcct 400
 ggaccccagc aaaagcagcg tgggttccta tttccacacc atggtggaga 450
 gccttgtggg ctggggctac acacggggtg aggatgtccg aggggctccc 500
```

tatgactggc gccgagcccc aaatgaaaac gggccctact tcctggccct 550 ccgcgagatg atcgaggaga tgtaccagct gtatgggggc cccgtggtgc 600 tggttgccca cagtatgggc aacatgtaca cgctctactt tctgcagcgg 650 cagccgcagg cctggaagga caagtatatc cgggccttcg tgtcactggg 700 tgcgccctgg gggggcgtgg ccaagaccct gcgcgtcctg gcttcaggag 750 acaacaaccg gatcccagtc atcgggcccc tgaagatccg ggagcagcag 800 cggtcagctg tctccaccag ctggctgctg ccctacaact acacatggtc 850 acctgagaag gtgttcgtgc agacacccac aatcaactac acactgcggg 900 actaccgcaa gttcttccag gacatcggct ttgaagatgg ctggctcatg 950 cggcaggaca cagaagggct ggtggaagcc acgatgccac ctggcgtgca 1000 gctgcactgc ctctatggta ctggcgtccc cacaccagac tccttctact 1050 atgagagett ceetgacegt gacectaaaa tetgetttgg tgaeggegat 1100 ggtactgtga acttgaagag tgccctgcag tgccaggcct ggcagagccg 1150 ccaggagcac caagtgttgc tgcaggagct gccaggcagc gagcacatcg 1200 agatgctggc caacgccacc accetggcct atctgaaacg tgtgctcctt 1250 gggccctgac tcctgtgcca caggactcct gtggctcggc cgtggacctg 1300 ctgttggcct ctggggctgt catggcccac gcgttttgca aagtttgtga 1350 ctcaccattc aaggccccga gtcttggact gtgaagcatc tgccatgggg 1400 aagtgctgtt tgttatcctt tctctgtggc agtgaagaag gaagaaatga 1450 gagtetagae teaagggaea etggatggea agaatgetge tgatggtgga 1500 actgctgtga ccttaggact ggctccacag ggtggactgg ctgggccctg 1550 gtcccagtcc ctgcctgggg ccatgtgtcc ccctattcct gtgggctttt 1600 catacttgcc tactgggccc tggccccgca gccttcctat gagggatgtt 1650 actgggctgt ggtcctgtac ccagaggtcc cagggatcgg ctcctggccc 1700 ctcgggtgac ccttcccaca caccagccac agataggcct gccactggtc 1750 atgggtagct agagctgctg gcttccctgt ggcttagctg gtggccagcc 1800 tgactggctt cctgggcgag cctagtagct cctgcaggca ggggcagttt 1850 gttgcgttct tcgtggttcc caggccctgg gacatctcac tccactccta 1900 cctcccttac caccaggage attcaagete tggattggge ageagatgtg 1950

cccccagtcc cgcaggctgt gttccagggg ccctgatttc ctcggatgtg 2000 ctattggccc caggactgaa gctgcctcc ttcaccctgg gactgtggtt 2050 ccaaggatga gagcaggggt tggagccatg gccttctggg aacctatgga 2100 gaaagggaat ccaaggaagc agccaaggct gctcgcagct tccctgaget 2150 gcacctcttg ctaaccccac catcacactg ccaccctgcc ctagggtctc 2200 actagtacca agtgggtcag cacagggctg aggatggggc tcctatccac 2250 cctggccagc acccagctta gtgctggac tagcccagaa acttgaatgg 2300 gaccctgaga gagccagggg tcccctgagg cccccctagg ggcttctgt 2350 ctgccccagg gtgctccatg gatctccctg tggcagcagg catggagagt 2400 cagggctgcc ttcatggcag taggctctaa gtgggtgact ggccacaggc 2450 cgagaaaagg gtacagcctc taggtgggt tcccaaagac gccttcaggc 2500 tggactgagc tgctccca cagggttct gtgcagctgg atttctctg 2550 ttgcatcat gcctgccct tgtcccct tgttcctgag tggccccaca 2600 tggggctctg agcagctgt atctggatc tggcaataaa agtactctgg 2650 atgctgtaaa aaaaaaaaa aaaaaaaaa 2680

<210> 157

<211> 412

<212> PRT

<213> Artificial

<400> 157

Met Gly Leu His Leu Arg Pro Tyr Arg Val Gly Leu Leu Pro Asp 1 5 10 15

Gly Leu Leu Phe Leu Leu Leu Leu Met Leu Leu Ala Asp Pro 20 25 30

Ala Leu Pro Ala Gly Arg His Pro Pro Val Val Leu Val Pro Gly 35 40 45

Asp Leu Gly Asn Gln Leu Glu Ala Lys Leu Asp Lys Pro Thr Val
50 55 60

Val His Tyr Leu Cys Ser Lys Lys Thr Glu Ser Tyr Phe Thr Ile
65 70 75

Trp Leu Asn Leu Glu Leu Leu Leu Pro Val Ile Ile Asp Cys Trp 80 85 90

Ile Asp Asn Ile Arg Leu Val Tyr Asn Lys Thr Ser Arg Ala Thr 95 100 105

Gln Phe Pro Asp Gly Val Asp Val Arg Val Pro Gly Phe Gly Lys

	110				115					120
Thr Phe Ser	Leu Glu 125	Phe Le	u Asp	Pro	Ser 130	Lys	Ser	Ser	Val	Gly 135
Ser Tyr Phe	His Thr 140	Met Va	l Glu	Ser	Leu 145	Val	Gly	Trp	Gly	Tyr 150
Thr Arg Gly	Glu Asp 155	Val Ar	g Gly	Ala	Pro 160	Tyr	Asp	Trp	Arg	Arg 165
Ala Pro Asn	Glu Asn 170	Gly Pr	o Tyr	Phe	Leu 175	Ala	Leu	Arg	Glu	Met 180
Ile Glu Glu	Met Tyr 185	Gln Le	u Tyr	Gly	Gly 190	Pro	Val	Val	Leu	Val 195
Ala His Ser	Met Gly 200	Asn Me	t Tyr	Thr	Leu 205	Tyr	Phe	Leu	Gln	Arg 210
Gln Pro Gln	Ala Trp 215	Lys As	p Lys	Tyr	Ile 220	Arg	Ala	Phe	Val	Ser 225
Leu Gly Ala	Pro Trp 230	Gly Gl	y Val	Ala	Lys 235	Thr	Leu	Arg	Val	Leu 240
Ala Ser Gly	Asp Asn 245	Asn Ar	g Ile	Pro	Val 250	Ile	Gly	Pro	Leu	Lys 255
Ile Arg Glu	Gln Gln 260	Arg Se	r Ala	Val	Ser 265	Thr	Ser	Trp	Leu	Leu 270
Pro Tyr Asn	Tyr Thr 275	Trp Se	r Pro	Glu	Lys 280	Val	Phe	Val	Gln	Thr 285
Pro Thr Ile	Asn Tyr 290	Thr Le	u Arg	Asp	Tyr 295	Arg	Lys	Phe	Phe	Gln 300
Asp Ile Gly	Phe Glu 305	Asp Gl	y Trp	Leu	Met 310	Arg	Gln	Asp	Thr	Glu 315
Gly Leu Val	Glu Ala 320	Thr Me	t Pro	Pro	Gly 325	Val	Gln	Leu	His	Cys 330
Leu Tyr Gly	Thr Gly 335		o Thr	Pro	Asp 340	Ser	Phe	Tyr	Tyr	Glu 345
Ser Phe Pro	Asp Arg 350	Asp Pr	o Lys	Ile	Cys 355	Phe	Gly	Asp	Gly	Asp 360
Gly Thr Val	Asn Leu 365	Lys Se	r Ala	Leu	Gln 370	Cys	Gln	Ala	Trp	Gln 375
Ser Arg Gln	Glu His 380	Gln Va	l Leu	Leu	Gln 385	Glu	Leu	Pro	Gly	Ser 390
Glu His Ile	Glu Met 395	Leu Al	a Asn	Ala	Thr 400	Thr	Leu	Ala	Tyr	Leu 405

```
Lys Arg Val Leu Leu Gly Pro
<210> 158
<211> 23
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 158
ctggggctac acacggggtg agg 23
<210> 159
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 159
ggtgccgctg cagaaagtag agcg 24
<210> 160
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
gccccaaatg aaaacgggcc ctacttcctg gccctccgcg agatg 45
<210> 161
<211> 1512
<212> DNA
<213> Homo sapiens
<400> 161
 cggacgcgtg ggcggacgcg tggggcggcg gcagcggcgg cgacggcgac 50
atggagagcg gggcctacgg cgcggccaag gcgggcggct ccttcgacct 100
gcggcgcttc ctgacgcagc cgcaggtggt ggcgcgcgc gtgtgcttgg 150
tcttcgcctt gatcgtgttc tcctgcatct atggtgaggg ctacagcaat 200
gcccacgagt ctaagcagat gtactgcgtg ttcaaccgca acgaggatgc 250
ctgccgctat ggcagtgcca tcggggtgct ggccttcctg gcctcggcct 300
tcttcttggt ggtcgacgcg tatttccccc agatcagcaa cgccactgac 350
cgcaagtacc tggtcattgg tgacctgctc ttctcagctc tctggacctt 400
```

```
cctgtggttt gttggtttct gcttcctcac caaccagtgg gcagtcacca 450
acccgaagga cgtgctggtg ggggccgact ctgtgagggc agccatcacc 500
ttcagcttct tttccatctt ctcctggggt gtgctggcct ccctggccta 550
ccagcgctac aaggctggcg tggacgactt catccagaat tacgttgacc 600
ccactccgga ccccaacact gcctacgcct cctacccagg tgcatctgtg 650
gacaactacc aacagccacc cttcacccag aacgcggaga ccaccgaggg 700
ctaccagccg ccccctgtgt actgagtggc ggttagcgtg ggaaggggga 750
cagagagggc cctcccctct gccctggact ttcccatcag cctcctggaa 800
ctgccagccc ctctctttca cctgttccat cctgtgcagc tgacacacag 850
ctaaggagcc tcatagcctg gcggggctg gcagagccac accccaagtg 900
cctgtgccca gagggcttca gtcagccgct cactcctcca gggcactttt 950
aggaaagggt ttttagctag tgtttttcct cgcttttaat gacctcagcc 1000
ccgcctgcag tggctagaag ccagcaggtg cccatqtqct actqacaaqt 1050
gcctcagctt cccccggcc cgggtcaggc cgtgggagcc gctattatct 1100
gcgttctctg ccaaagactc gtgggggcca tcacacctgc cctgtgcagc 1150
ggagccggac caggctcttg tgtcctcact caggtttqct tcccctqtqc 1200
ccactgctgt atgatctggg ggccaccacc ctqtqccqqt qqcctctqqq 1250
ctgcctcccg tggtgtgagg gcggggctgg tgctcatggc acttcctcct 1300
tgctcccacc cctggcagca gggaagggct ttgcctgaca acacccaqct 1350
ttatgtaaat attctgcagt tgttacttag gaagcctggg gagggcaggg 1400
gtgccccatg gctcccagac tctgtctgtg ccgagtgtat tataaaatcg 1450
tgggggagat gcccggcctg ggatgctgtt tggagacgga ataaatgttt 1500
tctcattcaa ag 1512
```

<210> 162

<211> 224

<212> PRT

<213> Homo sapiens

<400> 162

Met Glu Ser Gly Ala Tyr Gly Ala Ala Lys Ala Gly Gly Ser Phe 1 5 10 15

Asp Leu Arg Arg Phe Leu Thr Gln Pro Gln Val Val Ala Arg Ala 20 25 30

<220>

<223> Synthetic oligonucleotide probe

```
Val Cys Leu Val Phe Ala Leu Ile Val Phe Ser Cys Ile Tyr Gly
 Glu Gly Tyr Ser Asn Ala His Glu Ser Lys Gln Met Tyr Cys Val
 Phe Asn Arg Asn Glu Asp Ala Cys Arg Tyr Gly Ser Ala Ile Gly
 Val Leu Ala Phe Leu Ala Ser Ala Phe Phe Leu Val Val Asp Ala
                  80
 Tyr Phe Pro Gln Ile Ser Asn Ala Thr Asp Arg Lys Tyr Leu Val
 Ile Gly Asp Leu Leu Phe Ser Ala Leu Trp Thr Phe Leu Trp Phe
                 110
 Val Gly Phe Cys Phe Leu Thr Asn Gln Trp Ala Val Thr Asn Pro
 Lys Asp Val Leu Val Gly Ala Asp Ser Val Arg Ala Ala Ile Thr
 Phe Ser Phe Phe Ser Ile Phe Ser Trp Gly Val Leu Ala Ser Leu
 Ala Tyr Gln Arg Tyr Lys Ala Gly Val Asp Asp Phe Ile Gln Asn
 Tyr Val Asp Pro Thr Pro Asp Pro Asn Thr Ala Tyr Ala Ser Tyr
                                     190
 Pro Gly Ala Ser Val Asp Asn Tyr Gln Gln Pro Pro Phe Thr Gln
                                                          210
 Asn Ala Glu Thr Thr Glu Gly Tyr Gln Pro Pro Pro Val Tyr
<210> 163
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 163
tggtcttcgc cttgatcgtg ttct 24
<210> 164
<211> 20
<212> DNA
<213> Artificial Sequence
```

```
<400> 164
 gtgtactgag cggcggttag 20
<210> 165
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 165
 ctgaaggtga tggctgccct cac 23
<210> 166
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 166
 ccaggaggct catgggaaag tcc 23
<210> 167
<211> 50
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 167
 ccacgagtct aagcagatgt actgcgtgtt caaccgcaac gaggatgcct 50
<210> 168
<211> 3143
<212> DNA
<213> Homo sapiens
<400> 168
gagccaccta ccctgctccg aggccaggcc tgcagggcct catcggccag 50
agggtgatca gtgagcagaa ggatgcccgt ggccgaggcc ccccaggtgg 100
ctggcgggca gggggacgga ggtgatggcg aggaagcgga gccagagggg 150
atgttcaagg cctgtgagga ctccaagaga aaagcccggg gctacctccg 200
cctggtgccc ctgtttgtgc tgctggccct gctcgtgctg gcttcggcgg 250
gggtgctact ctggtatttc ctagggtaca aggcggaggt gatggtcagc 300
caggtgtact caggcagtct gcgtgtactc aatcgccact tctcccagga 350
tcttacccgc cgggaatcta gtgccttccg cagtgaaacc gccaaagccc 400
```

agaagatget caaggagete atcaccagea eeegeetggg aacttactae 450 aactccagct ccgtctattc ctttggggag ggacccctca cctgcttctt 500 ctggttcatt ctccaaatcc ccgagcaccg ccggctgatg ctgagccccg 550 aggtggtgca ggcactgctg gtggaggagc tgctgtccac agtcaacagc 600 teggetgeeg teceetacag ggeegagtae gaagtggaee eegagggeet 650 agtgatcctg gaagccagtg tgaaagacat agctgcattg aattccacgc 700 tgggttgtta ccgctacagc tacgtgggcc agggccaggt cctccggctg 750 aaggggcctg accacctggc ctccagctgc ctgtggcacc tgcagggccc 800 caaggacctc atgetcaaac teeggetgga gtggaegetg geagagtgee 850 gggaccgact ggccatgtat gacgtggccg ggcccctgga gaagaggctc 900 atcacctcgg tgtacggctg cagccgccag gagcccgtgg tggaggttct 950 ggcgtcgggg gccatcatgg cggtcgtctg gaagaagggc ctgcacagct 1000 actacgaccc cttcgtgctc tccgtgcagc cggtggtctt ccaggcctgt 1050 gaagtgaacc tgacgctgga caacaggctc gactcccagg gcgtcctcag 1100 cacccegtae ttecccaget actaetegee ccaaacceae tgeteetgge 1150 acctcacggt gccctctctg gactacggct tggccctctg gtttgatgcc 1200 tatgcactga ggaggcagaa gtatgatttg ccgtgcaccc agggccagtg 1250 gacgatccag aacaggaggc tgtgtggctt gcgcatcctg cagccctacg 1300 ccgagaggat ccccgtggtg gccacggccg ggatcaccat caacttcacc 1350 teccagatet eceteacegg geeeggtgtg egggtgeact atggettgta 1400 caaccagtcg gacccctgcc ctggagagtt cctctgttct gtgaatggac 1450 tctgtgtccc tgcctgtgat ggggtcaagg actgccccaa cggcctggat 1500 gagagaaact gcgtttgcag agccacattc cagtgcaaag aggacagcac 1550 atgcatctca ctgcccaagg tctgtgatgg gcagcctgat tgtctcaacg 1600 gcagcgatga agagcagtgc caggaagggg tgccatgtgg gacattcacc 1650 ttccagtgtg aggaccggag ctgcgtgaag aagcccaacc cgcagtgtga 1700 tgggcggccc gactgcaggg acggctcgga tgaggagcac tgtgactgtg 1750 gcctccaggg cccctccagc cgcattgttg gtggagctgt gtcctccgag 1800 ggtgagtggc catggcaggc cagcctccag gttcggggtc gacacatctg 1850

```
tgggggggcc ctcatcgctg accgctgggt gataacagct gcccactgct 1900
 tccaggagga cagcatggcc tccacggtgc tgtggaccgt gttcctgggc 1950
 aaggtgtggc agaactcgcg ctggcctgga gaggtgtcct tcaaggtgag 2000
 ccgcctgctc ctgcacccgt accacgaaga ggacagccat gactacgacg 2050
 tggcgctgct gcagctcgac cacccggtgg tgcgctcggc cgccgtgcgc 2100
 ecegtetgee tgecegegeg eteceaette ttegageceg geetgeaetg 2150
 ctggattacg ggctggggcg ccttgcgcga gggcggcccc atcagcaacg 2200
 ctctgcagaa agtggatgtg cagttgatcc cacaggacct gtgcagcgag 2250
 gcctatcgct accaggtgac gccacgcatg ctgtgtgccg gctaccgcaa 2300
 gggcaagaag gatgcctgtc agggtgactc aggtggtccg ctggtgtgca 2350
 aggcactcag tggccgctgg ttcctggcgg ggctggtcag ctggggcctg 2400
 ggctgtggcc ggcctaacta cttcggcgtc tacacccgca tcacaggtgt 2450
 gatcagctgg atccagcaag tggtgacctg aggaactgcc cccctgcaaa 2500
 gcagggccca cctcctggac tcagagagcc cagggcaact gccaagcagg 2550
 gggacaagta ttctggcggg gggtggggga gagagcaggc cctgtggtgg 2600
 caggaggtgg catcttgtct cgtccctgat gtctgctcca gtgatggcag 2650
 gaggatggag aagtgccagc agctgggggt caagacgtcc cctgaggacc 2700
 caggeceaca eccagecett etgeeteeca attetetete etcegteece 2750
 ttcctccact gctgcctaat gcaaggcagt ggctcagcag caagaatgct 2800
 ggttctacat cccgaggagt gtctgaggtg cgccccactc tgtacagagg 2850
 ctgtttgggc agccttgcct ccagagagca gattccagct tcggaagccc 2900
 ctggtctaac ttgggatctg ggaatggaag gtgctcccat cggaggggac 2950
 cctcagagcc ctggagactg ccaggtgggc ctgctgccac tgtaagccaa 3000
aaggtgggga agtcctgact ccagggtcct tgccccaccc ctgcctgcca 3050
cctgggccct cacagcccag accctcactg ggaggtgagc tcagctgccc 3100
<211> 802
```

<210> 169

<212> PRT

<213> Homo sapiens

<400> 169

Met Pro Val Ala Glu Ala Pro Gln Val Ala Gly Gly Gln Gly Asp Gly Gly Asp Gly Glu Glu Ala Glu Pro Glu Gly Met Phe Lys Ala Cys Glu Asp Ser Lys Arg Lys Ala Arg Gly Tyr Leu Arg Leu Val Pro Leu Phe Val Leu Leu Ala Leu Leu Val Leu Ala Ser Ala Gly Val Leu Leu Trp Tyr Phe Leu Gly Tyr Lys Ala Glu Val Met Val Ser Gln Val Tyr Ser Gly Ser Leu Arg Val Leu Asn Arg His Phe Ser Gln Asp Leu Thr Arg Arg Glu Ser Ser Ala Phe Arg Ser Glu Thr Ala Lys Ala Gln Lys Met Leu Lys Glu Leu Ile Thr Ser Thr 120 Arg Leu Gly Thr Tyr Tyr Asn Ser Ser Ser Val Tyr Ser Phe Gly Glu Gly Pro Leu Thr Cys Phe Phe Trp Phe Ile Leu Gln Ile Pro 145 150 Glu His Arg Arg Leu Met Leu Ser Pro Glu Val Val Gln Ala Leu 155 Leu Val Glu Glu Leu Leu Ser Thr Val Asn Ser Ser Ala Ala Val 170 Pro Tyr Arg Ala Glu Tyr Glu Val Asp Pro Glu Gly Leu Val Ile Leu Glu Ala Ser Val Lys Asp Ile Ala Ala Leu Asn Ser Thr Leu 200 Gly Cys Tyr Arg Tyr Ser Tyr Val Gly Gln Gly Gln Val Leu Arg 215 Leu Lys Gly Pro Asp His Leu Ala Ser Ser Cys Leu Trp His Leu 230 Gln Gly Pro Lys Asp Leu Met Leu Lys Leu Arg Leu Glu Trp Thr Leu Ala Glu Cys Arg Asp Arg Leu Ala Met Tyr Asp Val Ala Gly 260 Pro Leu Glu Lys Arg Leu Ile Thr Ser Val Tyr Gly Cys Ser Arg Gln Glu Pro Val Val Glu Val Leu Ala Ser Gly Ala Ile Met Ala

				290					295					300
Val	Val	Trp	Lys	Lys 305	Gly	Leu	His	Ser	Tyr 310	Tyr	Asp	Pro	Phe	Val 315
Leu	Ser	Val	Gln	Pro 320	Val	Val	Phe	Gln	Ala 325	Cys	Glu	Val	Asn	Leu 330
Thr	Leu	Asp	Asn	Arg 335	Leu	Asp	Ser	Gln	Gly 340	Val	Leu	Ser	Thr	Pro 345
Tyr	Phe	Pro	Ser	Tyr 350	Tyr	Ser	Pro	Gln	Thr 355	His	Cys	Ser	Trp	His 360
Leu	Thr	Val	Pro	Ser 365	Leu	Asp	Tyr	Gly	Leu 370	Ala	Leu	Trp	Phe	Asp 375
Ala	Tyr	Ala	Leu	Arg 380	Arg	Gln	Lys	Tyr	Asp 385	Leu	Pro	Cys	Thr	Gln 390
Gly	Gln	Trp	Thr	Ile 395	Gln	Asn	Arg	Arg	Leu 400	Cys	Gly	Leu	Arg	Ile 405
Leu	Gln	Pro	Tyr	Ala 410	Glu	Arg	Ile	Pro	Val 415	Val	Ala	Thr	Ala	Gly 420
Ile	Thr	Ile	Asn	Phe 425	Thr	Ser	Gln	Ile	Ser 430	Leu	Thr	Gly	Pro	Gly 435
Val	Arg	Val	His	Tyr 440	Gly	Leu	Tyr	Asn	Gln 445	Ser	Asp	Pro	Cys	Pro 450
Gly	Glu	Phe	Leu	Cys 455	Ser	Val	Asn	Gly	Leu 460	Суѕ	Val	Pro	Ala	Cys 465
Asp	Gly	Val	Lys	Asp 470	Cys	Pro	Asn	Gly	Leu 475	Asp	Glu	Arg	Asn	Cys 480
Val	Cys	Arg	Ala	Thr 485	Phe	Gln	Суз	Lys	Glu 490	Asp	Ser	Thr	Cys	Ile 495
Ser	Leu	Pro	Lys	Val 500	Суѕ	Asp	Gly	Gln	Pro 505	Asp	Суз	Leu	Asn	Gly 510
Ser	Asp	Glu	Glu	Gln 515	Cys	Gln	Glu	Gly	Val 520	Pro	Cys	Gly	Thr	Phe 525
Thr	Phe	Gln	Cys	Glu 530	Asp	Arg	Ser	Cys	Val 535	Lys	Lys	Pro	Asn	Pro 540
Gln	Cys	Asp	Gly	Arg 545	Pro	Asp	Cys	Arg	Asp 550	Gly	Ser	Asp	Glu	Glu 555
His	Cys	Asp	Cys	Gly 560	Leu	Gln	Gly	Pro	Ser 565	Ser	Arg	Ile	Val	Gly 570
Gly	Ala	Val	Ser	Ser 575	Glu	Gly	Glu	Trp	Pro 580	Trp	Gln	Ala	Ser	Leu 585

Gln Val Arg Gly Arg His Ile Cys Gly Gly Ala Leu Ile Ala Asp Arg Trp Val Ile Thr Ala Ala His Cys Phe Gln Glu Asp Ser Met 605 615 Ala Ser Thr Val Leu Trp Thr Val Phe Leu Gly Lys Val Trp Gln 620 Asn Ser Arg Trp Pro Gly Glu Val Ser Phe Lys Val Ser Arg Leu Leu Leu His Pro Tyr His Glu Glu Asp Ser His Asp Tyr Asp Val Ala Leu Leu Gln Leu Asp His Pro Val Val Arg Ser Ala Ala Val 665 675 Arg Pro Val Cys Leu Pro Ala Arg Ser His Phe Phe Glu Pro Gly 680 Leu His Cys Trp Ile Thr Gly Trp Gly Ala Leu Arg Glu Gly Gly 705 Pro Ile Ser Asn Ala Leu Gln Lys Val Asp Val Gln Leu Ile Pro Gln Asp Leu Cys Ser Glu Ala Tyr Arg Tyr Gln Val Thr Pro Arg 735 Met Leu Cys Ala Gly Tyr Arg Lys Gly Lys Lys Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Ala Leu Ser Gly Arg 755 765 Trp Phe Leu Ala Gly Leu Val Ser Trp Gly Leu Gly Cys Gly Arg Pro Asn Tyr Phe Gly Val Tyr Thr Arg Ile Thr Gly Val Ile Ser 795 Trp Ile Gln Gln Val Val Thr

800

<210> 170

<211> 1327

<212> DNA

<213> Homo sapiens

<400> 170

gcacccaggg ccagtggacg atccagaaca ggaggctgtg tggcttgcgc 50 atectgeage cetaegeega gaggateece gtggtggeea eggeegggat 100 caccatcaac ttcacctccc agatctccct caccgggccc gqtgtqcggg 150 tgcactatgg cttgtacaac cagtcggacc cctgccctgg agagttcctc 200

```
tgttctgtga atggactctg tgtccctgcc tgtgatgggg tcaaggactg 250
ccccaacggc ctggatgaga gaaactgcgt ttgcagagcc acattccagt 300
gcaaagagga cagcacatgc atctcactgc ccaaggtctg tgatgggcag 350
cctgattgtc tcaacggcag cgatgaagag cagtgccagg aaggggtgcc 400
atgtgggaca ttcaccttcc agtgtgagga ccggagctgc gtgaagaagc 450
ccaacccgca gtgtgatggg cggcccgact gcagggacgg ctcggatgag 500
gageactgtg actgtggeet ccagggeece tecageegea ttgttggtgg 550
agetqtqtcc tecqaqqqtq aqtqqccatq qcaqqccaqc ctccaqqttc 600
ggggtcgaca catctgtggg ggggccctca tcgctgaccg ctgggtgata 650
acagetquee aetgetteea ggaggacage atggeeteea eggtgetgtg 700
gaccgtgttc ctgggcaagg tgtggcagaa ctcgcgctgg cctggagagg 750
tgtccttcaa ggtgagccgc ctgctcctgc acccgtacca cgaagaggac 800
agccatgact acgacgtggc gctgctgcag ctcgaccacc cggtggtgcg 850
cteggeegee gtgegeeeeg tetgeetgee egegegetee caettetteg 900
agcccggcct gcactgctgg attacgggct ggggcgcctt gcgcgagggc 950
ggccccatca gcaacgctct gcagaaagtg gatgtgcagt tgatcccaca 1000
ggacctgtgc agcgaggcct atcgctacca ggtgacgcca cgcatgctgt 1050
gtgccggcta ccgcaagggc aagaaggatg cctgtcaggg tgactcaggt 1100
ggtccgctgg tgtgcaaggc actcagtggc cgctggttcc tggcggggct 1150
ggtcagctgg ggcctgggct gtggccggcc taactacttc ggcgtctaca 1200
cccgcatcac aggtgtgatc agctggatcc agcaagtggt gacctgagga 1250
actgccccc tgcaaagcag ggcccacctc ctggactcag agagcccagg 1300
qcaactqcca aqcaqqqqqa caaqtat 1327
```

```
<210> 171
```

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 171

taacagctgc ccactgcttc cagg 24

<210> 172

```
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 172
 taatccagca gtgcaggccg gg 22
<210> 173
<211> 50
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
 atggcctcca cggtgctgtg gaccgtgttc ctgggcaagg tgtggcagaa 50
<210> 174
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 174
tgcctatgca ctgaggaggc agaag 25
<210> 175
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 175
aggcagggac acagagtcca ttcac 25
<210> 176
<211> 50
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 176
agtatgattt gccgtgcacc cagggccagt ggacgatcca gaacaggagg 50
<210> 177
<211> 1510
<212> DNA
<213> Homo sapiens
```

<400> 177

ggacgagggc agatctcgtt ctggggcaag ccgttgacac tcgctccctg 50 ccaccgcccg ggctccgtgc cgccaagttt tcattttcca ccttctctgc 100 ctccagtccc ccagccctt gccgagagaa gggtcttacc ggccgggatt 150 gctggaaaca ccaagaggtg gtttttgttt tttaaaactt ctgtttcttg 200 ggagggggtg tggcggggca ggatgagcaa ctccgttcct ctgctctgtt 250 tctggagcct ctgctattgc tttgctgcgg ggagccccgt accttttggt 300 ccagagggac ggctggaaga taagctccac aaacccaaag ctacacagac 350 tgaggtcaaa ccatctgtga ggtttaacct ccgcacctcc aaggacccag 400 agcatgaagg atgctacctc tccgtcggcc acagccagcc cttagaagac 450 tgcagtttca acatgacagc taaaaccttt ttcatcattc acggatggac 500 gatgagcggt atctttgaaa actggctgca caaactcgtg tcagccctgc 550 acacaagaga gaaagacgcc aatgtagttg tggttgactg gctccccctg 600 gcccaccagc tttacacgga tgcggtcaat aataccaggg tggtgggaca 650 cagcattgcc aggatgctcg actggctgca ggagaaggac gatttttctc 700 tcgggaatgt ccacttgatc ggctacagcc tcggagcgca cgtggccggg 750 tatgcaggca acttcgtgaa aggaacggtg ggccgaatca caggtttgga 800 tcctgccggg cccatgtttg aaggggccga catccacaag aggctctctc 850 cggacgatgc agattttgtg gatgtcctcc acacctacac gcgttccttc 900 ggcttgagca ttggtattca gatgcctgtg ggccacattg acatctaccc 950 caatgggggt gacttccagc caggctgtgg actcaacgat gtcttgggat 1000 caattgcata tggaacaatc acagaggtgg taaaatgtga gcatgagcga 1050 gccgtccacc tctttgttga ctctctggtg aatcaggaca agccgagttt 1100 tgccttccag tgcactgact ccaatcgctt caaaaagggg atctgtctga 1150 gctgccgcaa gaaccgttgt aatagcattg gctacaatgc caagaaaatg 1200 aggaacaaga ggaacagcaa aatgtaccta aaaacccggg caggcatgcc 1250 tttcagaggt aaccttcagt ccctggagtg tccctgagga aggcccttaa 1300 tacctccttc ttaataccat gctgcagagc agggcacatc ctagcccagg 1350 agaagtggcc agcacaatcc aatcaaatcg ttgcaaatca gattacactg 1400 tgcatgtcct aggaaaggga atctttacaa aataaacagt gtggacccct 1450

<210> 178

<211> 354

<212> PRT

<213> Homo sapiens

<400> 178

Met Ser Asn Ser Val Pro Leu Leu Cys Phe Trp Ser Leu Cys Tyr 1 5 10 15

Cys Phe Ala Ala Gly Ser Pro Val Pro Phe Gly Pro Glu Gly Arg
20 25 30

Leu Glu Asp Lys Leu His Lys Pro Lys Ala Thr Gln Thr Glu Val
35 40 45

Lys Pro Ser Val Arg Phe Asn Leu Arg Thr Ser Lys Asp Pro Glu
50 55 60

His Glu Gly Cys Tyr Leu Ser Val Gly His Ser Gln Pro Leu Glu 65 70 75

Asp Cys Ser Phe Asn Met Thr Ala Lys Thr Phe Phe Ile Ile His 80 85 90

Gly Trp Thr Met Ser Gly Ile Phe Glu Asn Trp Leu His Lys Leu 95 100 105

Val Ser Ala Leu His Thr Arg Glu Lys Asp Ala Asn Val Val 110 115 120

Val Asp Trp Leu Pro Leu Ala His Gln Leu Tyr Thr Asp Ala Val 125 130 135

Asn Asn Thr Arg Val Val Gly His Ser Ile Ala Arg Met Leu Asp 140 145 150

Trp Leu Gln Glu Lys Asp Asp Phe Ser Leu Gly Asn Val His Leu 155 160 165

Ile Gly Tyr Ser Leu Gly Ala His Val Ala Gly Tyr Ala Gly Asn 170 175 180

Phe Val Lys Gly Thr Val Gly Arg Ile Thr Gly Leu Asp Pro Ala 185 190 195

Gly Pro Met Phe Glu Gly Ala Asp Ile His Lys Arg Leu Ser Pro 200 205 210

Asp Asp Ala Asp Phe Val Asp Val Leu His Thr Tyr Thr Arg Ser 215 220 225

Phe Gly Leu Ser Ile Gly Ile Gln Met Pro Val Gly His Ile Asp 230 235 240

```
Ile Tyr Pro Asn Gly Gly Asp Phe Gln Pro Gly Cys Gly Leu Asn
Asp Val Leu Gly Ser Ile Ala Tyr Gly Thr Ile Thr Glu Val Val
                 260
                                     265
Lys Cys Glu His Glu Arg Ala Val His Leu Phe Val Asp Ser Leu
                                     280
                 275
Val Asn Gln Asp Lys Pro Ser Phe Ala Phe Gln Cys Thr Asp Ser
                                     295
                                                          300
                 290
Asn Arg Phe Lys Lys Gly Ile Cys Leu Ser Cys Arg Lys Asn Arg
                                                          315
Cys Asn Ser Ile Gly Tyr Asn Ala Lys Lys Met Arg Asn Lys Arg
                                                          330
Asn Ser Lys Met Tyr Leu Lys Thr Arg Ala Gly Met Pro Phe Arg
                 335
Gly Asn Leu Gln Ser Leu Glu Cys Pro
                 350
<210> 179
<211> 23
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 179
gtgagcatga gcgagccgtc cac 23
<210> 180
<211> 26
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 180
gctattacaa cggttcttgc ggcagc 26
<210> 181
<211> 44
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 181
ttgactctct ggtgaatcag gacaagccga gttttgcctt ccag 44
<210> 182
```

<211> 3240 <212> DNA

<213> Homo sapiens

<400> 182 cggacgcgtg ggcggacgcg tgggcctggg caagggccgg ggcgccgggc 50 acgcgctgga ggagtggagc agcacccggc cggccctggg ggctgacagt 150 cqqcaaaqtt tqqcccqaaq aqqaaqtqqt ctcaaacccc ggcaggtggc 200 gaccaggeca gaccaggggc getegetgec tgegggeggg etgtaggega 250 gggcgcgccc cagtgccgag acccggggct tcaggagccg gccccgggag 300 agaagagtgc ggcggcggac ggagaaaaca actccaaagt tggcgaaagg 350 caccqcccct actcccgggc tgccgccgcc tccccgcccc cagccctggc 400 atccagagta cgggtcgagc ccgggccatg gagcccccct ggggaggcgg 450 caccagggag cctgggcgcc cggggctccg ccgcgacccc atcgggtaga 500 ccacagaagc tccgggaccc ttccggcacc tctggacagc ccaggatgct 550 gttggccacc ctcctcctcc tcctccttgg aggcgctctg gcccatccag 600 accggattat ttttccaaat catgcttgtg aggacccccc agcagtgctc 650 ttagaagtgc agggcacctt acagaggccc ctggtccggg acagccgcac 700 ctcccctgcc aactgcacct ggctcatcct gggcagcaag gaacagactg 750 tcaccatcag gttccagaag ctacacctgg cctgtggctc agagcgctta 800 accetacget ecceteteca gecaetgate tecetgtgtg aggeaectee 850 cagccctctg cagctgcccg ggggcaacgt caccatcact tacagctatg 900 ctggggccag agcacccatg ggccagggct tcctgctctc ctacagccaa 950 gattggctga tgtgcctgca ggaagagttt cagtgcctga accaccgctg 1000 tgtatctgct gtccagcgct gtgatggggt tgatgcctgt ggcgatggct 1050 ctgatgaagc aggttgcagc tcagacccct tccctggcct gaccccaaga 1100 cccgtcccct ccctgccttg caatgtcacc ttggaggact tctatggggt 1150 cttctcctct cctggatata cacacctage ctcagtctcc caccccagt 1200 cetgecattg getgetggac ecceatgatg geeggegget ggeegtgege 1250 ttcacagccc tggacttggg ctttggagat gcagtgcatg tgtatgacgg 1300 ccctgggccc cctgagagct cccgactact gcgtagtctc acccacttca 1350

gcaatggcaa ggctgtcact gtggagacac tgtctggcca ggctgttgtg 1400 tectaceaea cagttgettg gageaatggt egtggettea atgeeaecta 1450 ccatgtgcgg ggctattgct tgccttggga cagaccctgt ggcttaggct 1500 ctggcctggg agctggcgaa ggcctaggtg agcgctgcta cagtgaggca 1550 cagcgctgtg acggctcatg ggactgtgct gacggcacag atgaggagga 1600 ctgcccaggc tgcccacctg gacacttccc ctgtggggct gctggcacct 1650 ctggtgccac agcctgctac ctgcctgctg accgctgcaa ctaccagact 1700 ttctgtgctg atggagcaga tgagagacgc tgtcggcatt gccagcctgg 1750 caatttccga tgccgggacg agaagtgcgt gtatgagacg tgggtgtgcg 1800 atgggcagcc agactgtgcg gacggcagtg atgagtggga ctgctcctat 1850 gttctgcccc gcaaggtcat tacagctgca gtcattggca gcctagtgtg 1900 eggeetgete etggteateg eeetgggetg cacetgeaag etetatgeea 1950 ttcgcaccca ggagtacagc atctttgccc ccctctcccg gatggaggct 2000 gagattgtgc agcagcaggc accecettee tacgggcage teattgccca 2050 gggtgccatc ccacctgtag aagactttcc tacagagaat cctaatgata 2100 actcagtgct gggcaacctg cgttctctgc tacagatctt acgccaggat 2150 atgactccag gaggtggccc aggtgcccgc cgtcgtcagc ggggccgctt 2200 gatgcgacgc ctggtacgcc gtctccgccg ctggggcttg ctccctcgaa 2250 ccaacacccc ggctcgggcc tctgaggcca gatcccaggt cacaccttct 2300 gctgctcccc ttgaggccct agatggtggc acaggtccag cccgtgaggg 2350 cggggcagtg ggtgggcaag atggggagca ggcaccccca ctgcccatca 2400 aggetecect eccatetget ageaegtete eageeceeae taetgteeet 2450 gaageceeag ggeeactgee etcactgeee etagageeat cactattgte 2500 tggagtggtg caggccctgc gaggccgcct gttgcccagc ctggggcccc 2550 caggaccaac ccggagcccc cctggacccc acacagcagt cctggccctg 2600 gaagatgagg acgatgtgct actggtgcca ctggctgagc cgggggtgtg 2650 ggtagctgag gcagaggatg agccactgct tacctgaggg gacctggggg 2700 ctctactgag gcctctcccc tgggggctct actcatagtg gcacaacctt 2750 ttagaggtgg gtcagcctcc cctccaccac ttccttccct gtccctggat 2800

ttcagggact tggtgggcct cccgttgacc ctatgtagct gctataaagt 2850
taagtgtccc tcaggcaggg agagggctca cagagtctcc tctgtacgtg 2900
gccatggcca gacaccccag tcccttcacc accacctgct ccccacgcca 2950
ccaccatttg ggtggctgtt tttaaaaagt aaagttctta gaggatcata 3000
ggtctggaca ctccatcctt gccaaacctc tacccaaaag tggccttaag 3050
caccggaatg ccaattaact agagaccctc cagccccaa ggggaggatt 3100
tgggcagaac ctgaggtttt gccatccaca atccctccta cagggcctgg 3150
ctcacaaaaa gagtgcaaca aatgcttcta ttccatagct acggcattgc 3200
tcagtaagtt gaggtcaaaa ataaaggaat catacatctc 3240

<210> 183

<211> 713

<212> PRT

<213> Homo sapiens

<400> 183

Met Leu Leu Ala Thr Leu Leu Leu Leu Leu Gly Gly Ala Leu 1 5 10 15

Ala His Pro Asp Arg Ile Ile Phe Pro Asn His Ala Cys Glu Asp 20 25 30

Pro Pro Ala Val Leu Leu Glu Val Gln Gly Thr Leu Gln Arg Pro 35 40 45

Leu Val Arg Asp Ser Arg Thr Ser Pro Ala Asn Cys Thr Trp Leu
50 55 60

Ile Leu Gly Ser Lys Glu Gln Thr Val Thr Ile Arg Phe Gln Lys
65 70 75

Leu Gln Pro Leu Ile Ser Leu Cys Glu Ala Pro Pro Ser Pro Leu 95 100 105

Gln Leu Pro Gly Gly Asn Val Thr Ile Thr Tyr Ser Tyr Ala Gly
110 115 120

Ala Arg Ala Pro Met Gly Gln Gly Phe Leu Leu Ser Tyr Ser Gln 125 130 135

Asp Trp Leu Met Cys Leu Gln Glu Glu Phe Gln Cys Leu Asn His
140 145 150

Arg Cys Val Ser Ala Val Gln Arg Cys Asp Gly Val Asp Ala Cys 155 160 165

Gly Asp Gly Ser Asp Glu Ala Gly Cys Ser Ser Asp Pro Phe Pro

				170					175					180
Gly	Leu	Thr	Pro	Arg 185	Pro	Val	Pro	Ser	Leu 190	Pro	Cys	Asn	Val	Thr 195
Leu	Glu	Asp	Phe	Tyr 200	Gly	Val	Phe	Ser	Ser 205	Pro	Gly	Tyr	Thr	His 210
Leu	Ala	Ser	Val	Ser 215	His	Pro	Gln	Ser	Cys 220	His	Trp	Leu	Leu	Asp 225
Pro	His	Asp	Gly	Arg 230	Arg	Leu	Ala	Val	Arg 235	Phe	Thr	Ala	Leu	Asp 240
Leu	Gly	Phe	Gly	Asp 245	Ala	Val	His	Val	Tyr 250	Asp	Gly	Pro	Gly	Pro 255
Pro	Glu	Ser	Ser	Arg 260	Leu	Leu	Arg	Ser	Leu 265	Thr	His	Phe	Ser	Asn 270
Gly	Lys	Ala	Val	Thr 275	Val	Glu	Thr	Leu	Ser 280	Gly	Gln	Ala	Val	Val 285
Ser	Tyr	His	Thr	Val 290	Ala	Trp	Ser	Asn	Gly 295	Arg	Gly	Phe	Asn	Ala 300
Thr	Tyr	His	Val	Arg 305	Gly	Tyr	Cys	Leu	Pro 310	Trp	Asp	Arg	Pro	Cys 315
Gly	Leu	Gly	Ser	Gly 320	Leu	Gly	Ala	Gly	Glu 325	Gly	Leu	Gly	Glu	Arg 330
Cys	Tyr	Ser	Glu	Ala 335	Gln	Arg	Cys	Asp	Gly 340	Ser	Trp	Asp	Cys	Ala 345
Asp	Gly	Thr	Asp	Glu 350	Glu	Asp	Cys	Pro	Gly 355	Cys	Pro	Pro	Gly	His 360
Phe	Pro	Cys	Gly	Ala 365	Ala	Gly	Thr	Ser	Gly 370	Ala	Thr	Ala	Cys	Tyr 375
Leu	Pro	Ala	Asp	Arg 380	Cys	Asn	Tyr	Gln	Thr 385	Phe	Cys	Ala	Asp	Gly 390
Ala	Asp	Glu	Arg	Arg 395	Суз	Arg	His	Cys	Gln 400	Pro	Gly	Asn	Phe	Arg 405
Суз	Arg	Asp	Glu	Lys 410	Cys	Val	Tyr	Glu	Thr 415	Trp	Val	Cys	Asp	Gly 420
Gln	Pro	Asp	Суз	Ala 425	Asp	Gly	Ser	Asp	Glu 430	Trp	Asp	Cys	Ser	Tyr 435
Val	Leu	Pro	Arg	Lys 440	Val	Ile	Thr	Ala	Ala 445	Val	Ile	Gly	Ser	Leu 450
Val	Cys	Gly	Leu	Leu 455	Leu	Val	Ile	Ala	Leu 460	Gly	Cys	Thr	Cys	Lys 465

```
Leu Tyr Ala Ile Arg Thr Gln Glu Tyr Ser Ile Phe Ala Pro Leu
Ser Arg Met Glu Ala Glu Ile Val Gln Gln Ala Pro Pro Ser
                                                         495
Tyr Gly Gln Leu Ile Ala Gln Gly Ala Ile Pro Pro Val Glu Asp
Phe Pro Thr Glu Asn Pro Asn Asp Asn Ser Val Leu Gly Asn Leu
                                                         525
                515
Arg Ser Leu Leu Gln Ile Leu Arg Gln Asp Met Thr Pro Gly Gly
                530
Gly Pro Gly Ala Arg Arg Gln Arg Gly Arg Leu Met Arg Arg
Leu Val Arg Arg Leu Arg Arg Trp Gly Leu Leu Pro Arg Thr Asn
Thr Pro Ala Arg Ala Ser Glu Ala Arg Ser Gln Val Thr Pro Ser
                 575
Ala Ala Pro Leu Glu Ala Leu Asp Gly Gly Thr Gly Pro Ala Arg
Glu Gly Gly Ala Val Gly Gly Gln Asp Gly Glu Gln Ala Pro Pro
Leu Pro Ile Lys Ala Pro Leu Pro Ser Ala Ser Thr Ser Pro Ala
Pro Thr Thr Val Pro Glu Ala Pro Gly Pro Leu Pro Ser Leu Pro
Leu Glu Pro Ser Leu Leu Ser Gly Val Val Gln Ala Leu Arg Gly
Arg Leu Leu Pro Ser Leu Gly Pro Pro Gly Pro Thr Arg Ser Pro
Pro Gly Pro His Thr Ala Val Leu Ala Leu Glu Asp Glu Asp Asp
Val Leu Leu Val Pro Leu Ala Glu Pro Gly Val Trp Val Ala Glu
Ala Glu Asp Glu Pro Leu Leu Thr
                 710
<210> 184
<211> 20
```

<212> DNA

<213> Artificial Sequence

<223> Synthetic oligonucleotide probe

```
<400> 184
ggctgtcact gtggagacac 20
<210> 185
<211> 18
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 185
gcaaggtcat tacagctg 18
<210> 186
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 186
agaacatagg agcagtccca ctc 23
<210> 187
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 187
tgcctgctgc tgcacaatct cag 23
<210> 188
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 188
 ggctattgct tgccttggga cagaccctgt ggcttaggct ctggc 45
<210> 189
<211> 663
<212> DNA
<213> Homo sapiens
<400> 189
 cgagctgggc gagaagtagg ggagggcggt gctccgccgc ggtggcggtt 50
 gctatcgctt cgcagaacct actcaggcag ccagctgaga agagttgagg 100
 gaaagtgctg ctgctgggtc tgcagacgcg atggataacg tgcagccgaa 150
```

aataaaacat cgccccttct gcttcagtgt gaaaggccac gtgaagatgc 200
tgcggctggc actaactgtg acatctatga cctttttat catcgcacaa 250
gcccctgaac catatattgt tatcactgga tttgaagtca ccgttatctt 300
attttcata cttttatatg tactcagact tgatcgatta atgaagtggt 350
tattttggcc tttgcttgat attatcaact cactggtaac aacagtattc 400
atgctcatcg tatctgtgtt ggcactgata ccagaaacca caacattgac 450
agttggtgga ggggtgtttg cacttgtgac agcagtatgc tgtcttgccg 500
acggggccct tatttaccgg aagcttctgt tcaatcccag cggtccttac 550
cagaaaaagc ctgtgcatga aaaaaaagaa gttttgtaat tttatattac 600
tttttagttt gatactaagt attaaacata tttctgtatt cttccaaaaa 650
aaaaaaaaaa aaa 663

<210> 190

<211> 152

<212> PRT

<213> Homo sapiens

<400> 190

Met Asp Asn Val Gln Pro Lys Ile Lys His Arg Pro Phe Cys Phe 1 5 10 15

Ser Val Lys Gly His Val Lys Met Leu Arg Leu Ala Leu Thr Val 20 25 30

Thr Ser Met Thr Phe Phe Ile Ile Ala Gln Ala Pro Glu Pro Tyr 35 40 45

Ile Val Ile Thr Gly Phe Glu Val Thr Val Ile Leu Phe Phe Ile 50 55 60

Leu Leu Tyr Val Leu Arg Leu Asp Arg Leu Met Lys Trp Leu Phe 65 70 75

Trp Pro Leu Leu Asp Ile Ile Asn Ser Leu Val Thr Thr Val Phe 80 85 90

Met Leu Ile Val Ser Val Leu Ala Leu Ile Pro Glu Thr Thr 95 100 105

Leu Thr Val Gly Gly Val Phe Ala Leu Val Thr Ala Val Cys 110 115 120

Cys Leu Ala Asp Gly Ala Leu Ile Tyr Arg Lys Leu Leu Phe Asn 125 130 135

Pro Ser Gly Pro Tyr Gln Lys Lys Pro Val His Glu Lys Lys Glu 140 145 150

Val Leu

```
<210> 191
<211> 495
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 78, 212, 234, 487
<223> unknown base
<400> 191
 gggcgagaag taggggaggg cgtgttccgc cgcggtggcg gttgctatcg 50
 ttttqcaqaa cctactcaqq caqccagntq agaagagttq agggaaagtg 100
 ctgctgctgg gtctgcagac gcgatggata acgtgcagcc gaaaataaaa 150
 catcgcccct tctgcttcag tgtgaaaggc cacgtgaaga tgctgcggct 200
 ggcactaact gngacatcta tgaccttttt tatnatcgca caagcccctg 250
 aaccatatat tgttatcact ggatttgaag tcaccgttat cttatttttc 300
 atacttttat atgtactcag acttgatcga ttaatgaagt ggttattttg 350
 gcctttgctt gatattatca actcactggt aacaacagta ttcatgctca 400
 tcgtatctgt gttggcactg ataccagaaa ccacaacatt gacagttggt 450
 ggaggggtgt ttgcacttgt gacagcagta tgctgtnttg ccgac 495
<210> 192
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 192
 cgttttgcag aacctactca ggcag 25
<210> 193
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 193
 cctccaccaa ctgtcaatgt tgtgg 25
<210> 194
<211> 40
```

```
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 194
aaaqtqctqc tgctgggtct gcagacgcga tggataacgt 40
<210> 195
<211> 1879
<212> DNA
<213> Homo sapien
<400> 195
ggaccggcta ggctgggcgc gccccccggg ccccgccgtg ggcatgggcg 100
 cactggcccg ggcgctgctg ctgcctctgc tggcccagtg gctcctgcgc 150
qccqcccqq aqctqqccc cqcqcccttc acqctqcccc tccgggtggc 200
 cgcggccacg aaccgcgtag ttgcgcccac cccgggaccc gggacccctg 250
 ccgagcgcca cgccgacggc ttggcgctcg ccctggagcc tgccctggcg 300
 tccccgcgg gcgccgccaa cttcttggcc atggtagaca acctgcaggg 350
 ggactctggc cgcggctact acctggagat gctgatcggg acccccccgc 400
 agaagctaca gattctcgtt gacactggaa gcagtaactt tgccgtggca 450
 ggaaccccgc actcctacat agacacgtac tttgacacag agaggtctag 500
 cacataccgc tccaagggct ttgacgtcac agtgaagtac acacaaggaa 550
 gctggacggg cttcgttggg gaagacctcg tcaccatccc caaaggcttc 600
 aatacttctt ttcttgtcaa cattgccact atttttgaat cagagaattt 650
 ctttttgcct gggattaaat ggaatggaat acttggccta gcttatgcca 700
 cacttgccaa gccatcaagt tctctggaga ccttcttcga ctccctggtg 750
 acacaaqcaa acatccccaa cgttttctcc atgcagatgt gtggagccgg 800
 cttgcccgtt gctggatctg ggaccaacgg aggtagtctt gtcttgggtg 850
 gaattgaacc aagtttgtat aaaggagaca tctggtatac ccctattaag 900
 gaagagtggt actaccagat agaaattctg aaattggaaa ttggaggcca 950
 aagccttaat ctggactgca gagagtataa cgcagacaag gccatcgtgg 1000
 acagtggcac cacgctgctg cgcctgcccc agaaggtgtt tgatgcggtg 1050
 gtggaagctg tggcccgcgc atctctgatt ccagaattct ctgatggttt 1100
```

ctggactggg tcccagctgg cgtgctggac gaattcggaa acaccttggt 1150 cttacttccc taaaatctcc atctacctga gagacgagaa ctccagcagg 1200 tcattccgta tcacaatcct gcctcagctt tacattcagc ccatgatggg 1250 ggccggcctg aattatgaat gttaccgatt cggcatttcc ccatccacaa 1300 atgcgctggt gatcggtgcc acggtgatgg agggcttcta cgtcatcttc 1350 gacagagccc agaagaggt gggcttcgca gcgagcccct gtgcagaaat 1400 tgcaggtgct gcagtgtctg aaatttccgg gcctttctca acagaggatg 1450 tagccagcaa ctgtgtcccc gctcagtctt tgagcgagcc cattttgtgg 1500 attgtgtcct atgcgctcat gagcgtctgt ggagccatcc tccttgtctt 1550 aatcgtcctg ctgctgctgc cgttccggtg tcagcgtcgc ccccgtgacc 1600 ctgaggtcgt caatgatgag tcctctctgg tcagacatcg ctggaaatga 1650 atagccagge etgaceteaa geaaceatga acteagetat taagaaaate 1700 acatttccag ggcagcagcc gggatcgatg gtggcgcttt ctcctgtgcc 1750 caccegtett caatetetgt tetgeteeca gatgeettet agatteaetg 1800 tcttttgatt cttgattttc aagctttcaa atcctcccta cttccaagaa 1850 aaataattaa aaaaaaaact tcattctaa 1879

<210> 196

<211> 518

<212> PRT

<213> Homo sapien

<400> 196

Met Gly Ala Leu Ala Arg Ala Leu Leu Leu Pro Leu Leu Ala Gln
1 5 10 15

Trp Leu Leu Arg Ala Ala Pro Glu Leu Ala Pro Ala Pro Phe Thr 20 25 30

Leu Pro Leu Arg Val Ala Ala Ala Thr Asn Arg Val Val Ala Pro 35 40 45

Thr Pro Gly Pro Gly Thr Pro Ala Glu Arg His Ala Asp Gly Leu 50 55 60

Ala Leu Ala Leu Glu Pro Ala Leu Ala Ser Pro Ala Gly Ala Ala 65 70 75

Asn Phe Leu Ala Met Val Asp Asn Leu Gln Gly Asp Ser Gly Arg

Gly Tyr Tyr Leu Glu Met Leu Ile Gly Thr Pro Pro Gln Lys Leu 95 100 105

Gln	Ile	Leu	Val	Asp 110	Thr	Gly	Ser	Ser	Asn 115	Phe	Ala	Val	Ala	Gly 120
Thr	Pro	His	Ser	Tyr 125	Ile	Asp	Thr	Tyr	Phe 130	Asp	Thr	Glu	Arg	Ser 135
Ser	Thr	Tyr	Arg	Ser 140	Lys	Gly	Phe	Asp	Val 145	Thr	Val	Lys	Tyr	Thr 150
Gln	Gly	Ser	Trp	Thr 155	Gly	Phe	Val	Gly	Glu 160	Asp	Leu	Val	Thr	Ile 165
Pro	Lys	Gly	Phe	Asn 170	Thr	Ser	Phe	Leu	Val 175	Asn	Ile	Ala	Thr	Ile 180
Phe	Glu	Ser	Glu	Asn 185	Phe	Phe	Leu	Pro	Gly 190	Ile	Lys	Trp	Asn	Gly 195
Ile	Leu	Gly	Leu	Ala 200	Tyr	Ala	Thr	Leu	Ala 205	Lys	Pro	Ser	Ser	Ser 210
Leu	Glu	Thr	Phe	Phe 215	Asp	Ser	Leu	Val	Thr 220	Gln	Ala	Asn	Ile	Pro 225
Asn	Val	Phe	Ser	Met 230	Gln	Met	Cys	Gly	Ala 235	Gly	Leu	Pro	Val	Ala 240
Gly	Ser	Gly	Thr	Asn 245	Gly	Gly	Ser	Leu	Val 250	Leu	Gly	Gly	Ile	Glu 255
Pro	Ser	Leu	Tyr	Lys 260	Gly	Asp	Ile	Trp	Tyr 265	Thr	Pro	Ile	Lys	Glu 270
Glu	Trp	Tyr	Tyr	Gln 275	Ile	Glu	Ile	Leu	Lys 280	Leu	Glu	Ile	Gly	Gly 285
Gln	Ser	Leu	Asn	Leu 290	Asp	Cys	Arg	Glu	Tyr 295	Asn	Ala	Asp	Lys	Ala 300
Ile	Val	Asp	Ser	Gly 305	Thr	Thr	Leu	Leu	Arg 310	Leu	Pro	Gln	Lys	Val 315
Phe	Asp	Ala	Val	Val 320	Glu	Ala	Val	Ala	Arg 325	Ala	Ser	Leu	Ile	Pro 330
Glu	Phe	Ser	Asp	Gly 335		Trp	Thr	Gly	Ser 340		Leu	Ala	Cys	Trp 345
Thr	Asn	Ser	Glu	Thr 350		Trp	Ser	Tyr	Phe 355	Pro	Lys	Ile	Ser	Ile 360
Tyr	Leu	Arg	Asp	Glu 365		Ser	Ser	Arg	Ser 370		Arg	Ile	Thr	Ile 375
Leu	Pro	Gln	Leu	Tyr 380		Gln	Pro	Met	Met 385		Ala	. Gly	Leu	Asn 390
Tyr	Glu	Суз	Tyr	Arg	Phe	Gly	lle	Ser	Pro	Ser	Thr	Asn	Ala	Leu

			395					400					405
Val I	le G	ly Ala	Thr 410	Val	Met	Glu	Gly	Phe 415	Tyr	Val	Ile	Phe	Asp 420
Arg A	la G	ln Ly:	Arg 425	Val	Gly	Phe	Ala	Ala 430	Ser	Pro	Cys	Ala	Glu 435
Ile A	la G	ly Ala	a Ala 440	Val	Ser	Glu	Ile	Ser 445	Gly	Pro	Phe	Ser	Thr 450
Glu A	sp V	al Ala	Ser 455	Asn	Суз	Val	Pro	Ala 460	Gln	Ser	Leu	Ser	Glu 465
Pro I	le L	eu Trj	7 Ile 470	Val	Ser	Tyr	Ala	Leu 475	Met	Ser	Val	Cys	Gl ₃ 480
Ala I	le L	eu Le	ı Val 485	Leu	Ile	Val	Leu	Leu 490	Leu	Leu	Pro	Phe	Arc 495
Cys G	ln A	rg Ar	g Pro 500	Arg	Asp	Pro	Glu	Val 505	Val	Asn	Asp	Glu	Ser 510
Ser L	eu V	al Ar	g His 515	Arg	Trp	Lys							
<210> 197 <211> 21 <212> DNA <213> Artificial Sequence													
<220> <223> Synthetic oligonucleotide probe													
<400> cgcag		t aca	gatto	tc g	21								
<210> 198 <211> 19 <212> DNA <213> Artificial Sequence													
<220> <223> Synthetic oligonucleotide probe													
<400> ggaaa		ıa ggc	caaag	c 19									
<210> <211> <212> <213>	20 DNA	ficia.	l Seq	uenc	e								
<220> <223>	Synt	hetic	olig	onuc	leot	ide	prob	е					
<400>		c ago	aacto	tq 2	0				•				

```
<210> 200
<211> 19
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 200
gccttggctc gttctcttc 19
<210> 201
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 201
ggtcctgtgc ctggatgg 18
<210> 202
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 202
gacaagacta cctccgttgg tc 22
<210> 203
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 203
 tgatgcacag ttcagcacct gttg 24
<210> 204
<211> 47
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 204
 cgctccaagg gctttgacgt cacagtgaag tacacacaag gaagctg 47
<210> 205
<211> 1939
<212> DNA
```

<400> 205 cgcctccgcc ttcggaggct gacgccccg ggcgccgttc caggcctgtg 50 cagggcggat cggcagccgc ctggcggcga tccagggcgg tgcggggcct 100 gggcgggagc cgggaggcgc ggccggcatg gaggcgctgc tgctgggcgc 150 ggggttgctg ctgggcgctt acgtgcttgt ctactacaac ctggtgaagg 200 ccccgccgtg cggcggcatg ggcaacctgc ggggccgcac ggccgtggtc 250 acgggcgcca acagcggcat cggaaagatg acggcgctgg agctggcgcg 300 ccggggageg cgcgtggtgc tggcctgccg cagccaggag cgcggggagg 350 cggctgcctt cgacctccgc caggagagtg ggaacaatga ggtcatcttc 400 atggccttgg acttggccag tctggcctcg gtgcgggcct ttgccactgc 450 ctttctgagc tctgagccac ggttggacat cctcatccac aatgccggta 500 tcagttcctg tggccggacc cgtgaggcgt ttaacctgct gcttcgggtg 550 aaccatatcg gtccctttct gctgacacat ctgctgctgc cttgcctgaa 600 ggcatgtgcc cctagccgcg tggtggtggt agcctcagct gcccactgtc 650 ggggacgtct tgacttcaaa cgcctggacc gcccagtggt gggctggcgg 700 caggagetge gggeatatge tgacactaag etggetaatg tactgtttge 750 ccgggagctc gccaaccagc ttgaggccac tggcgtcacc tgctatgcag 800 cccacccagg gcctgtgaac tcggagctgt tcctgcgcca tgttcctgga 850 tggctgcgcc cacttttgcg cccattggct tggctggtgc tccgggcacc 900 aagagggggt gcccagacac ccctgtattg tgctctacaa gagggcatcg 950 agcccctcag tgggagatat tttgccaact gccatgtgga agaggtgcct 1000 ccagctgccc gagacgaccg ggcagcccat cggctatggg aggccagcaa 1050 gaggctggca gggcttgggc ctggggagga tgctgaaccc gatgaagacc 1100 cccagtctga ggactcagag gccccatctt ctctaagcac ccccaccct 1150 gaggagecea cagtttetea acettaeece ageeeteaga geteaceaga 1200 tttgtctaag atgacgcacc gaattcaggc taaagttgag cctgagatcc 1250 agetetecta acceteagge caggatgett gecatggeae tteatggtee 1300 ttgaaaacct cggatgtgtg tgaggccatg ccctggacac tgacgggttt 1350 gtgatcttga cctccgtggt tactttctgg ggccccaagc tgtgccctgg 1400 acatetett teetggttga aggaataatg ggtgattatt tetteetgag 1450 agtgacagta acceccagatg gagagatagg ggtatgetag acactgtget 1500 teteggaaat ttggatgtag tatttteagg ecceaceett attgattetg 1550 ateagetetg gageagagge agggagtttg caatgtgatg eactgeeaae 1600 attgagaatt agtgaactga teeetttgea acegtetage taggtagtta 1650 aattaceece atgttaatga ageggaatta ggeteeegag etaagggaet 1700 egeetagggt eteacagtga gtaggaggag ggeetgggat etgaaceeaa 1750 gggtetgagg ecagggeega etgeegtaag atgggtgetg agaagtgagt 1800 eagggeaggg eagetggtat eggagteece eatgggagta aggggaegee 1850 tteegggegg atgeegeaa aaaaaaaaa aaaaaaaa 1939

<210> 206

<211> 377

<212> PRT

<213> Homo sapiens

<400> 206

Met Glu Ala Leu Leu Gly Ala Gly Leu Leu Gly Ala Tyr 1 5 10 15

Val Leu Val Tyr Tyr Asn Leu Val Lys Ala Pro Pro Cys Gly Gly 20 25 30

Met Gly Asn Leu Arg Gly Arg Thr Ala Val Val Thr Gly Ala Asn \$35\$ 40 45

Ser Gly Ile Gly Lys Met Thr Ala Leu Glu Leu Ala Arg Arg Gly
50 55 60

Ala Ala Phe Asp Leu Arg Gln Glu Ser Gly Asn Asn Glu Val Ile 80 85 90

Phe Met Ala Leu Asp Leu Ala Ser Leu Ala Ser Val Arg Ala Phe 95 100 105

Ala Thr Ala Phe Leu Ser Ser Glu Pro Arg Leu Asp Ile Leu Ile 110 115 120

His Asn Ala Gly Ile Ser Ser Cys Gly Arg Thr Arg Glu Ala Phe 125 130 135

Asn Leu Leu Arg Val Asn His Ile Gly Pro Phe Leu Leu Thr 140 145 150

His Leu Leu Pro Cys Leu Lys Ala Cys Ala Pro Ser Arg Val Val Val Val Ala Ser Ala Ala His Cys Arg Gly Arg Leu Asp Phe 180 170 Lys Arg Leu Asp Arg Pro Val Val Gly Trp Arg Gln Glu Leu Arg Ala Tyr Ala Asp Thr Lys Leu Ala Asn Val Leu Phe Ala Arg Glu 200 Leu Ala Asn Gln Leu Glu Ala Thr Gly Val Thr Cys Tyr Ala Ala His Pro Gly Pro Val Asn Ser Glu Leu Phe Leu Arg His Val Pro 230 Gly Trp Leu Arg Pro Leu Leu Arg Pro Leu Ala Trp Leu Val Leu 245 Arg Ala Pro Arg Gly Gly Ala Gln Thr Pro Leu Tyr Cys Ala Leu 260 Gln Glu Gly Ile Glu Pro Leu Ser Gly Arg Tyr Phe Ala Asn Cys His Val Glu Glu Val Pro Pro Ala Ala Arg Asp Asp Arg Ala Ala 290 His Arg Leu Trp Glu Ala Ser Lys Arg Leu Ala Gly Leu Gly Pro Gly Glu Asp Ala Glu Pro Asp Glu Asp Pro Gln Ser Glu Asp Ser 320 Glu Ala Pro Ser Ser Leu Ser Thr Pro His Pro Glu Glu Pro Thr Val Ser Gln Pro Tyr Pro Ser Pro Gln Ser Ser Pro Asp Leu Ser 350 Lys Met Thr His Arg Ile Gln Ala Lys Val Glu Pro Glu Ile Gln

Leu Ser

<210> 207

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 207

cttcatggcc ttggacttgg ccag 24

```
<210> 208
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 208
acgccagtgg cctcaagctg gttg 24
<210> 209
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 209
 ctttctgagc tctgagccac ggttggacat cctcatccac aatgc 45
<210> 210
<211> 3716
<212> DNA
<213> Homo sapiens
<400> 210
 ggaggagaca gcctcctggg gggcaggggt tccctgcctc tgctgctcct 50
 gctcatcatg ggaggcatgg ctcaggactc cccgccccag atcctagtcc 100
 accccagga ccagctgttc cagggccctg gccctgccag gatgagctgc 150
 caagecteag gecagecaee teceaecate egetggttge tgaatgggea 200
 gcccctgagc atggtgcccc cagacccaca ccacctcctg cctgatggga 250
 cccttctgct gctacagccc cctgcccggg gacatgccca cgatggccag 300
 gccctgtcca cagacctggg tgtctacaca tgtgaggcca gcaaccggct 350
 tggcacggca gtcagcagag gcgctcggct gtctgtggct gtcctccggg 400
 aggatttcca gatccagcct cgggacatgg tggctgtggt gggtgagcag 450
 tttactctgg aatgtgggcc gccctggggc cacccagagc ccacagtctc 500
 atggtggaaa gatgggaaac ccctggccct ccagcccgga aggcacacag 550
 tgtccggggg gtccctgctg atggcaagag cagagaagag tgacgaaggg 600
 acctacatgt gtgtggccac caacagcgca ggacataggg agagccgcgc 650
 agcccgggtt tccatccagg agccccagga ctacacggag cctgtggagc 700
 ttctggctgt gcgaattcag ctggaaaatg tgacactgct gaacccggat 750
```

cctgcagagg gccccaagcc tagaccggcg gtgtggctca gctggaaggt 800 cagtggccct gctgcgcctg cccaatctta cacggccttg ttcaggaccc 850 agactgcccc gggaggccag ggagctccgt gggcagagga gctgctggcc 900 ggctggcaga gcgcagagct tggaggcctc cactggggcc aagactacga 950 gttcaaagtg agaccatcct ctggccgggc tcgaggccct gacagcaacg 1000 tgctgctcct gaggctgccg gaaaaagtgc ccagtgcccc acctcaggaa 1050 gtgactctaa agcctggcaa tggcactgtc tttgtgagct gggtcccacc 1100 acctgctgaa aaccacaatg gcatcatccg tggctaccag gtctggagcc 1150 tgggcaacac atcactgcca ccagccaact ggactgtagt tggtgagcag 1200 acccagctgg aaatcgccac ccatatgcca ggctcctact gcgtgcaagt 1250 ggctgcagtc actggtgctg gagctgggga gcccagtaga cctgtctgcc 1300 tccttttaga gcaggccatg gagcgagcca cccaagaacc cagtgagcat 1350 ggtccctgga ccctggagca gctgagggct accttgaagc ggcctgaggt 1400 cattgccacc tgcggtgttg cactctggct gctgcttctg ggcaccgccg 1450 tgtgtatcca ccgccggcgc cgagctaggg tgcacctggg cccaggtctg 1500 tacagatata ccagtgagga tgccatccta aaacacagga tggatcacag 1550 tgactcccag tggttggcag acacttggcg ttccacctct ggctctcggg 1600 acctgagcag cagcagcagc ctcagcagtc ggctgggggc ggatgcccgg 1650 gacccactag actgtcgtcg ctccttgctc tcctgggact cccgaagccc 1700 cggcgtgccc ctgcttccag acaccagcac tttttatggc tccctcatcg 1750 ctgagctgcc ctccagtacc ccagccaggc caagtcccca ggtcccagct 1800 gtcaggcgcc tcccacccca gctggcccag ctctccagcc cctgttccag 1850 ctcagacagc ctctgcagcc gcaggggact ctcttctccc cgcttgtctc 1900 tggcccctgc agaggcttgg aaggccaaaa agaagcagga gctgcagcat 1950 gccaacagtt ccccactgct ccggggcagc cactccttgg agctccgggc 2000 ctgtgagtta ggaaatagag gttccaagaa cctttcccaa agcccaggag 2050 ctgtgcccca agctctggtt gcctggcggg ccctgggacc gaaactcctc 2100 agctcctcaa atgagctggt tactcgtcat ctccctccag cacccctctt 2150 tcctcatgaa actcccccaa ctcagagtca acagacccag cctccggtgg 2200

caccacagge tecetectee atectgetge cageageece catececate 2250 cttagcccct gcagtccccc tagcccccag gcctcttccc tctctggccc 2300 cagcccagct tocagtcgcc tgtccagctc ctcactgtca tccctggggg 2350 aggatcaaga cagcgtgctg acccctgagg aggtagccct gtgcttggaa 2400 ctcaqtqaqq qtqaqqaqac tcccaggaac agcgtctctc ccatgccaag 2450 ggctccttca cccccacca cctatgggta catcagcgtc ccaacagcct 2500 caqaqttcac qqacatqqqc agqactqqag gaggggtggg gcccaagggg 2550 ggagtettge tgtgeceace teggecetge etcacececa eccecagega 2600 gggctcctta gccaatggtt ggggctcagc ctctgaggac aatgccgcca 2650 gegecagage cageettgte ageteeteeg atggeteett cetegetgat 2700 gctcactttg cccgggccct ggcagtggct gtggatagct ttggtttcgg 2750 tctagagccc agggaggcag actgcgtctt catagatgcc tcatcacctc 2800 cctcccacg ggatgagatc ttcctgaccc ccaacctctc cctgcccctg 2850 tgggagtgga ggccagactg gttggaagac atggaggtca gccacaccca 2900 gcggctggga agggggatgc ctccctggcc ccctgactct cagatctctt 2950 cccagagaag tcagctccac tgtcgtatgc ccaaggctgg tgcttctcct 3000 gtagattact cctgaaccgt gtccctgaga cttcccagac gggaatcaga 3050 accacttctc ctgtccaccc acaagacctg ggctgtggtg tgtgggtctt 3100 ggcctgtgtt tctctgcagc tggggtccac cttcccaagc ctccagagag 3150 ttctccctcc acgattgtga aaacaaatga aaacaaaatt agagcaaagc 3200 tgacctggag ccctcaggga gcaaaacatc atctccacct gactcctagc 3250 cactgctttc tcctctgtgc catccactcc caccaccagg ttgttttggc 3300 ctgaggagca gccctgcctg ctgctcttcc cccaccattt ggatcacagg 3350 aagtggagga gccagaggtg cctttgtgga ggacagcagt ggctgctggg 3400 agagggctgt ggaggaagga gcttctcgga gccccctctc agccttacct 3450 gggcccctcc tctagagaag agctcaactc tctcccaacc tcaccatgga 3500 aagaaaataa ttatgaatgc cactgaggca ctgaggccct acctcatgcc 3550 aaacaaaggg ttcaaggctg ggtctagcga ggatgctgaa ggaagggagg 3600 tatgagaccg taggtcaaaa gcaccatcct cgtactgttg tcactatgag 3650

cttaagaaat ttgataccat aaaatggtaa aaaaaaaaa aaaaaaaaa 3700 aaaaaaaaaa aaaaaa 3716

<210> 211

<211> 985

<212> PRT

<213> Homo sapiens

<400> 211

Met Gly Gly Met Ala Gln Asp Ser Pro Pro Gln Ile Leu Val His 1 5 10 15

Pro Gln Asp Gln Leu Phe Gln Gly Pro Gly Pro Ala Arg Met Ser 20 25 30

Cys Gln Ala Ser Gly Gln Pro Pro Pro Thr Ile Arg Trp Leu Leu 35 40 45

Asn Gly Gln Pro Leu Ser Met Val Pro Pro Asp Pro His His Leu
50 55 60

Leu Pro Asp Gly Thr Leu Leu Leu Leu Gln Pro Pro Ala Arg Gly
65 70 75

His Ala His Asp Gly Gln Ala Leu Ser Thr Asp Leu Gly Val Tyr 80 85 90

Thr Cys Glu Ala Ser Asn Arg Leu Gly Thr Ala Val Ser Arg Gly
95 100 105

Ala Arg Leu Ser Val Ala Val Leu Arg Glu Asp Phe Gln Ile Gln 110 115 120

Pro Arg Asp Met Val Ala Val Val Gly Glu Gln Phe Thr Leu Glu 125 130 135

Cys Gly Pro Pro Trp Gly His Pro Glu Pro Thr Val Ser Trp Trp 140 145 150

Lys Asp Gly Lys Pro Leu Ala Leu Gln Pro Gly Arg His Thr Val 155 160 165

Ser Gly Gly Ser Leu Leu Met Ala Arg Ala Glu Lys Ser Asp Glu 170 175 180

Gly Thr Tyr Met Cys Val Ala Thr Asn Ser Ala Gly His Arg Glu 185 190 195

Ser Arg Ala Ala Arg Val Ser Ile Gln Glu Pro Gln Asp Tyr Thr 200 205 210

Glu Pro Val Glu Leu Leu Ala Val Arg Ile Gln Leu Glu Asn Val 215 220 225

Thr Leu Leu Asn Pro Asp Pro Ala Glu Gly Pro Lys Pro Arg Pro 230 235 240

Ala Val Trp Leu Ser Trp Lys Val Ser Gly Pro Ala Ala Pro Ala Gln Ser Tyr Thr Ala Leu Phe Arg Thr Gln Thr Ala Pro Gly Gly 260 Gln Gly Ala Pro Trp Ala Glu Glu Leu Leu Ala Gly Trp Gln Ser 275 Ala Glu Leu Gly Gly Leu His Trp Gly Gln Asp Tyr Glu Phe Lys Val Arg Pro Ser Ser Gly Arg Ala Arg Gly Pro Asp Ser Asn Val Leu Leu Leu Arg Leu Pro Glu Lys Val Pro Ser Ala Pro Pro Gln 330 Glu Val Thr Leu Lys Pro Gly Asn Gly Thr Val Phe Val Ser Trp Val Pro Pro Pro Ala Glu Asn His Asn Gly Ile Ile Arg Gly Tyr 360 350 Gln Val Trp Ser Leu Gly Asn Thr Ser Leu Pro Pro Ala Asn Trp Thr Val Val Gly Glu Gln Thr Gln Leu Glu Ile Ala Thr His Met Pro Gly Ser Tyr Cys Val Gln Val Ala Ala Val Thr Gly Ala Gly Ala Gly Glu Pro Ser Arg Pro Val Cys Leu Leu Glu Gln Ala Met Glu Arg Ala Thr Gln Glu Pro Ser Glu His Gly Pro Trp Thr 430 Leu Glu Gln Leu Arg Ala Thr Leu Lys Arg Pro Glu Val Ile Ala Thr Cys Gly Val Ala Leu Trp Leu Leu Leu Gly Thr Ala Val Cys Ile His Arg Arg Arg Arg Ala Arg Val His Leu Gly Pro Gly Leu Tyr Arg Tyr Thr Ser Glu Asp Ala Ile Leu Lys His Arg Met Asp His Ser Asp Ser Gln Trp Leu Ala Asp Thr Trp Arg Ser Thr 510 500 505 Ser Gly Ser Arg Asp Leu Ser Ser Ser Ser Ser Leu Ser Ser Arg Leu Gly Ala Asp Ala Arg Asp Pro Leu Asp Cys Arg Arg Ser Leu

			530					535					540
Leu Ser	Trp	Asp	Ser 545	Arg	Ser	Pro	Gly	Val 550	Pro	Leu	Leu	Pro	Asp 555
Thr Ser	Thr	Phe	Tyr 560	Gly	Ser	Leu	Ile	Ala 565	Glu	Leu	Pro	Ser	Ser 570
Thr Pro	Ala	Arg	Pro 575	Ser	Pro	Gln	Val	Pro 580	Ala	Val	Arg	Arg	Leu 585
Pro Pro	Gln	Leu	Ala 590	Gln	Leu	Ser	Ser	Pro 595	Cys	Ser	Ser	Ser	Asp 600
Ser Leu	Cys	Ser	Arg 605	Arg	Gly	Leu	Ser	Ser 610	Pro	Arg	Leu	Ser	Leu 615
Ala Pro	Ala	Glu	Ala 620	Trp	Lys	Ala	Lys	Lys 625	Lys	Gln	Glu	Leu	Gln 630
His Ala	Asn	Ser	Ser 635	Pro	Leu	Leu	Arg	Gly 640	Ser	His	Ser	Leu	Glu 645
Leu Arc	, Ala	Cys	Glu 650	Leu	Gly	Asn	Arg	Gly 655	Ser	Lys	Asn	Leu	Ser 660
Gln Ser	Pro	Gly	Ala 665	Val	Pro	Gln	Ala	Leu 670	Val	Ala	Trp	Arg	Ala 675
Leu Gly	7 Pro	Lys	Leu 680	Leu	Ser	Ser	Ser	Asn 685	Glu	Leu	Val	Thr	Arg 690
His Let	ı Pro	Pro	Ala 695	Pro	Leu	Phe	Pro	His 700	Glu	Thr	Pro	Pro	Thr 705
Gln Sei	Gln	Gln	Thr 710	Gln	Pro	Pro	Val	Ala 715	Pro	Gln	Ala	Pro	Ser 720
Ser Ile	e Leu	Leu	Pro 725	Ala	Ala	Pro	Ile	Pro 730	Ile	Leu	Ser	Pro	Cys 735
Ser Pro	Pro	Ser	Pro 740	Gln	Ala	Ser	Ser	Leu 745		Gly	Pro	Ser	Pro 750
Ala Se	r Ser	Arg	Leu 755		Ser	Ser	Ser	Leu 760	Ser	Ser	Leu	Gly	Glu 765
Asp Gli	n Asp	Ser	Val 770		Thr	Pro	Glu	Glu 775	Val	Ala	Leu	Суз	Leu 780
Glu Le	ı Ser	Glu	Gly 785		Glu	Thr	Pro	Arg 790		Ser	Val	Ser	Pro 795
Met Pro	o Arg	Ala	Pro 800	Ser	Pro	Pro	Thr	Thr 805		Gly	Tyr	Ile	Ser 810
Val Pro	o Thr	Ala	Ser 815		Phe	Thr	Asp	Met 820		Arg	Thr	Gly	Gly 825

```
Gly Val Gly Pro Lys Gly Gly Val Leu Leu Cys Pro Pro Arg Pro
                 830
 Cys Leu Thr Pro Thr Pro Ser Glu Gly Ser Leu Ala Asn Gly Trp
Gly Ser Ala Ser Glu Asp Asn Ala Ala Ser Ala Arg Ala Ser Leu
Val Ser Ser Ser Asp Gly Ser Phe Leu Ala Asp Ala His Phe Ala
                 875
Arg Ala Leu Ala Val Ala Val Asp Ser Phe Gly Phe Gly Leu Glu
 Pro Arg Glu Ala Asp Cys Val Phe Ile Asp Ala Ser Ser Pro Pro
                 905
 Ser Pro Arq Asp Glu Ile Phe Leu Thr Pro Asn Leu Ser Leu Pro
                 920
 Leu Trp Glu Trp Arg Pro Asp Trp Leu Glu Asp Met Glu Val Ser
                 935
 His Thr Gln Arg Leu Gly Arg Gly Met Pro Pro Trp Pro Pro Asp
 Ser Gln Ile Ser Ser Gln Arg Ser Gln Leu His Cys Arg Met Pro
                 965
Lys Ala Gly Ala Ser Pro Val Asp Tyr Ser
                 980
<210> 212
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 212
gaagggacct acatgtgtgt ggcc 24
<210> 213
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 213
actgacette cagetgagee acae 24
<210> 214
<211> 50
<212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 214
aggactacac ggagcctgtg gagcttctgg ctgtgcgaat tcagctggaa 50
<210> 215
<211> 2749
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 1869, 1887
<223> unknown base
<400> 215
 ctcccacggt gtccagcgcc cagaatgcgg cttctggtcc tgctatgggg 50
 ttgcctgctg ctcccaggtt atgaagccct ggagggccca gaggaaatca 100
 gcgggttcga aggggacact gtgtccctgc agtgcaccta cagggaagag 150
 ctgagggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200
 tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250
 agggcagggt gtccatccgt gacagccgcc aggagctctc gctcattgtg 300
 accctgtgga acctcaccct gcaagacgct ggggagtact ggtgtggggt 350
 cgaaaaacgg ggccccgatg agtctttact gatctctctg ttcgtctttc 400
 caggaccetg etgteeteec teccettete ecacetteea geetetgget 450
 acaacacgcc tgcagcccaa ggcaaaagct cagcaaaccc agcccccagg 500
 attgacttct cctgggctct acccggcagc caccacagcc aagcagggga 550
 agacaggggc tgaggcccct ccattgccag ggacttccca gtacgggcac 600
gaaaggactt ctcagtacac aggaacctct cctcacccag cgacctctcc 650
 tectgeaggg agetecegee ecceeatgea getggaetee aceteageag 700
aggacaccag tccagctctc agcagtggca gctctaagcc cagggtgtcc 750
atcccgatgg tccgcatact ggccccagtc ctggtgctgc tgagccttct 800
gtcagccgca ggcctgatcg ccttctgcag ccacctgctc ctgtggagaa 850
aggaagctca acaggccacg gagacacaga ggaacgagaa gttctggctc 900
tcacgcttga ctgcggagga aaaggaagcc ccttcccagg cccctgaggg 950
ggacgtgatc tcgatgcctc ccctccacac atctgaggag gagctgggct 1000
```

cagtgaagca gtatggctgg ctggatcagc accgattccc gaaagctttc 1100 cacctcagec teagagteca getgeeegga etceaggget etceccaece 1150 tececagget etectetige atgitecage etgacetaga agegittigte 1200 agecetggag eccagagegg tggeettget etteeggetg gagaetggga 1250 catecetgat aggtteacat ecetgggeag agtaceagge tgetgaecet 1300 cagcagggcc agacaaggct cagtggatct ggtctgagtt tcaatctgcc 1350 aggaactect gggeeteatg eccagtgteg gaccetgeet tecteceact 1400 ccagacccca ccttgtcttc cctccctggc gtcctcagac ttagtcccac 1450 ggtctcctgc atcagctggt gatgaagagg agcatgctgg ggtgagactg 1500 ggattctggc ttctctttga accacctgca tccagccctt caggaagcct 1550 gtgaaaaacg tgattcctgg ccccaccaag acccaccaaa accatctctg 1600 ggcttggtgc aggactctga attctaacaa tgcccagtga ctgtcgcact 1650 tgagtttgag ggccagtggg cctgatgaac gctcacaccc cttcagctta 1700 gagtetgeat ttgggetgtg aegteteeae etgeeceaat agatetgete 1750 tgtctgcgac accagatcca cgtggggact cccctgaggc ctgctaagtc 1800 caggecttgg teaggteagg tgeacattge aggataagee caggacegge 1850 acagaagtgg ttgcctttnc catttgccct ccctggncca tgccttcttg 1900 cctttggaaa aaatgatgaa gaaaaccttg gctccttcct tgtctggaaa 1950 gggttacttg cctatgggtt ctggtggcta gagagaaaag tagaaaacca 2000 gagtgcacgt aggtgtctaa cacagaggag agtaggaaca gggcggatac 2050 ctgaaggtga ctccgagtcc agccccctgg agaaggggtc gggggtggtg 2100 gtaaagtagc acaactacta tttttttttt ttttccatta ttattgtttt 2150 ttaaqacaqa atctcgtgct gctgcccagg ctggagtgca gtggcacgat 2200 ctgcaaactc cgcctcctgg gttcaagtga ttcttctgcc tcagcctccc 2250 gagtagetgg gattacagge acgeaceace acacetgget aattitigta 2300 cttttagtag agatggggtt tcaccatgtt ggccaggctg gtcttgaact 2350 cctgacctca aatgagcctc ctgcttcagt ctcccaaatt gccgggatta 2400 caggcatgag ccactgtgtc tggccctatt tcctttaaaa agtgaaatta 2450

<210> 216

<211> 332

<212> PRT

<213> Homo sapiens

<400> 216

Met Arg Leu Leu Val Leu Leu Trp Gly Cys Leu Leu Pro Gly 1 5 10 15

Tyr Glu Ala Leu Glu Gly Pro Glu Glu Ile Ser Gly Phe Glu Gly
20 25 30

Asp Thr Val Ser Leu Gln Cys Thr Tyr Arg Glu Glu Leu Arg Asp 35 40 45

His Arg Lys Tyr Trp Cys Arg Lys Gly Gly Ile Leu Phe Ser Arg
50 55 60

Cys Ser Gly Thr Ile Tyr Ala Glu Glu Glu Glu Glu Glu Thr Met
65 70 75

Lys Gly Arg Val Ser Ile Arg Asp Ser Arg Gln Glu Leu Ser Leu 80 85 90

Ile Val Thr Leu Trp Asn Leu Thr Leu Gln Asp Ala Gly Glu Tyr 95 100 105

Trp Cys Gly Val Glu Lys Arg Gly Pro Asp Glu Ser Leu Leu Ile 110 115 120

Ser Leu Phe Val Phe Pro Gly Pro Cys Cys Pro Pro Ser Pro Ser 125 $$ 130 $$ 135

Pro Thr Phe Gln Pro Leu Ala Thr Thr Arg Leu Gln Pro Lys Ala 140 145 150

Lys Ala Gln Gln Thr Gln Pro Pro Gly Leu Thr Ser Pro Gly Leu
155 160 165

Tyr Pro Ala Ala Thr Thr Ala Lys Gln Gly Lys Thr Gly Ala Glu 170 175 180

Ala Pro Pro Leu Pro Gly Thr Ser Gln Tyr Gly His Glu Arg Thr 185 190 195

Ser Gln Tyr Thr Gly Thr Ser Pro His Pro Ala Thr Ser Pro Pro

				200					205					210
Ala	Gly	Ser	Ser	Arg 215	Pro	Pro	Met	Gln	Leu 220	Asp	Ser	Thr	Ser	Ala 225
Glu	Asp	Thr	Ser	Pro 230	Ala	Leu	Ser	Ser	Gly 235	Ser	Ser	Lys	Pro	Arg 240
Val	Ser	Ile	Pro	Met 245	Val	Arg	Ile	Leu	Ala 250	Pro	Val	Leu	Val	Leu 255
Leu	Ser	Leu	Leu	Ser 260	Ala	Ala	Gly	Leu	Ile 265	Ala	Phe	Cys	Ser	His 270
Leu	Leu	Leu	Trp	Arg 275	Lys	Glu	Ala	Gln	Gln 280	Ala	Thr	Glu	Thr	Gln 285
Arg	Asn	Glu	Lys	Phe 290	Trp	Leu	Ser	Arg	Leu 295	Thr	Ala	Glu	Glu	Lys 300
Glu	Ala	Pro	Ser	Gln 305	Ala	Pro	Glu	Gly	Asp 310	Val	Ile	Ser	Met	Pro 315
Pro	Leu	His	Thr	Ser 320	Glu	Glu	Glu	Leu	Gly 325	Phe	Ser	Lys	Phe	Val 330
Ser	Ser Ala													
<2112 <212	<210> 217 <211> 24 <212> DNA <213> Artificial Sequence													
	<220> <223> Synthetic oligonucleotide probe													
	<400> 217 ccctgcagtg cacctacagg gaag 24													
<211 <212	<210> 218 <211> 24 <212> DNA <213> Artificial Sequence													
	<220> <223> Synthetic oligonucleotide probe													
<400 ctg		8 ccc	ctgc	ttgg	ct g	tgg :	24							
<211:	<210> 219 <211> 47 <212> DNA <213> Artificial Sequence													
<220: <223:		nthe	tic	olia	onuc	leot	ide 1	orob	e					

```
<400> 219
ggtgcaggaa gggtgggatc ctcttctctc gctgctctgg ccacatc 47
<210> 220
<211> 950
<212> DNA
<213> Homo sapiens
<400> 220
ttgtgactaa aagctggcct agcaggccag ggagtgcagc tgcaggcgtg 50
ggggtggcag gagccgcaga gccagagcag acagccgaga aacaggtgga 100
 cagtgtgaaa gaaccagtgg tetegetetg ttgeccagge tagagtgtac 150
 tggcgtgatc atagctcact gcagcctcag actcctggac ttgagaaatc 200
 ctcctgcctt agcctcctgc atatctggga ctccaggggt gcactcaagc 250
cctgtttctt ctccttctgt gagtggacca cggaggctgg tgagctgcct 300
 gtcatcccaa agctcagctc tgagccagag tggtggtggc tccacctctg 350
 ccgccggcat agaagccagg agcagggctc tcagaaggcg gtggtgccca 400
 gctgggatca tgttgttggc cctggtctgt ctgctcagct gcctgctacc 450
 ctccagtgag gccaagctct acggtcgttg tgaactggcc agagtgctac 500
 atgacttcgg gctggacgga taccggggat acagcctggc tgactgggtc 550
 tgccttgctt atttcacaag cggtttcaac gcagctgctt tggactacga 600
 ggctgatggg agcaccaaca acgggatctt ccagatcaac agccggaggt 650
 ggtgcagcaa cctcaccccg aacgtcccca acgtgtgccg gatgtactgc 700
 tcagatttgt tgaatcctaa tctcaaggat accgttatct gtgccatgaa 750
 gataacccaa gagcctcagg gtctgggtta ctgggaggcc tggaggcatc 800
 actgccaggg aaaagacctc actgaatggg tggatggctg tgacttctag 850
 gatggacgga accatgcaca gcaggctggg aaatgtggtt tggttcctga 900
cctaggcttg ggaagacaag ccagcgaata aaggatggtt gaacgtgaaa 950
<210> 221
<211> 146
<212> PRT
<213> Homo sapiens
<400> 221
Met Leu Leu Ala Leu Val Cys Leu Leu Ser Cys Leu Leu Pro Ser
```

Ser Glu Ala Lys Leu Tyr Gly Arg Cys Glu Leu Ala Arg Val Leu 20 25

<210> 225

```
His Asp Phe Gly Leu Asp Gly Tyr Arg Gly Tyr Ser Leu Ala Asp
Trp Val Cys Leu Ala Tyr Phe Thr Ser Gly Phe Asn Ala Ala Ala
Leu Asp Tyr Glu Ala Asp Gly Ser Thr Asn Asn Gly Ile Phe Gln
Ile Asn Ser Arg Arg Trp Cys Ser Asn Leu Thr Pro Asn Val Pro
Asn Val Cys Arg Met Tyr Cys Ser Asp Leu Leu Asn Pro Asn Leu
Lys Asp Thr Val Ile Cys Ala Met Lys Ile Thr Gln Glu Pro Gln
                                                          120
                 110
Gly Leu Gly Tyr Trp Glu Ala Trp Arg His His Cys Gln Gly Lys
                 125
Asp Leu Thr Glu Trp Val Asp Gly Cys Asp Phe
<210> 222
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 222
gggatcatgt tgttggccct ggtc 24
<210> 223
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 223
 gcaaggcaga cccagtcagc cag 23
<210> 224
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 224
 ctgcctgcta ccctccaagt gaggccaagc tctacggtcg ttgtg 45
```

<211> 2049 <212> DNA

<213> Homo sapiens

<400> 225 ageogetgee eegggeeggg egecegegge ggeaccatga gteecegete 50 gtgcctgcgt tcgctgcgcc tcctcgtctt cgccgtcttc tcagccgccg 100 cgagcaactg gctgtacctg gccaagctgt cgtcggtggg gagcatctca 150 gaggaggaga cgtgcgagaa actcaagggc ctgatccaga ggcaggtgca 200 gatgtgcaag cggaacctgg aagtcatgga ctcggtgcgc cgcggtgccc 250 agctggccat tgaggagtgc cagtaccagt tccggaaccg gcgctggaac 300 tgctccacac tcgactcctt gcccgtcttc ggcaaggtgg tgacgcaagg 350 gactegggag geggeetteg tgtaegeeat etetteggea ggtgtggeet 400 ttgcagtgac gcgggcgtgc agcagtgggg agctggagaa gtgcggctgt 450 gacaggacag tgcatggggt cagcccacag ggcttccagt ggtcaggatg 500 ctctgacaac atcgcctacg gtgtggcctt ctcacagtcg tttgtggatg 550 tgcgggagag aagcaagggg gcctcgtcca gcagagccct catgaacctc 600 cacaacaatg aggccggcag gaaggccatc ctgacacaca tgcgggtgga 650 atgcaagtgc cacggggtgt caggctcctg tgaggtaaag acgtgctggc 700 gageegtgee geeetteege eaggtgggte acgeaetgaa ggagaagttt 750 gatggtgcca ctgaggtgga gccacgccgc gtgggctcct ccagggcact 800 ggtaccacgc aacgcacagt tcaagccgca cacagatgag gacctggtgt 850 acttggagcc tagccccgac ttctgtgagc aggacatgcg cagcggcgtg 900 ctgggcacga ggggccgcac atgcaacaag acgtccaagg ccatcgacgg 950 ctgtgagctg ctgtgctgtg gccgcggctt ccacacggcg caggtggagc 1000 tggctgaacg ctgcagctgc aaattccact ggtgctgctt cgtcaagtgc 1050 cggcagtgcc agcggctcgt ggagttgcac acgtgccgat gaccgcctgc 1100 ctagccctgc gccggcaacc acctagtggc ccagggaagg ccgataattt 1150 aaacagtctc ccaccaccta ccccaagaga tactggttgt attttttgtt 1200 ctggtttggt ttttgggtcc tcatgttatt tattgccgaa accaggcagg 1250 caaccccaag ggcaccaacc agggcctccc caaagcctgg gcctttgtgg 1300 ctgccactga ccaaagggac cttgctcgtg ccgctggctg cccgcatgtg 1350

<210> 226

<211> 351

<212> PRT

<213> Homo sapiens

<400> 226

Met Ser Pro Arg Ser Cys Leu Arg Ser Leu Arg Leu Leu Val Phe 1 5 10 15

Ala Val Phe Ser Ala Ala Ala Ser Asn Trp Leu Tyr Leu Ala Lys 20 25 30

Leu Ser Ser Val Gly Ser Ile Ser Glu Glu Glu Thr Cys Glu Lys \$35\$ \$40\$ \$45\$

Leu Lys Gly Leu Ile Gln Arg Gln Val Gln Met Cys Lys Arg Asn 50 55 60

Leu Glu Val Met Asp Ser Val Arg Arg Gly Ala Gln Leu Ala Ile 65 70 75

Glu Glu Cys Gln Tyr Gln Phe Arg Asn Arg Arg Trp Asn Cys Ser 80 85 90

Thr Leu Asp Ser Leu Pro Val Phe Gly Lys Val Val Thr Gln Gly
95 100

Thr Arg Glu Ala Ala Phe Val Tyr Ala Ile Ser Ser Ala Gly Val 110 115 120

```
Ala Phe Ala Val Thr Arg Ala Cys Ser Ser Gly Glu Leu Glu Lys
Cys Gly Cys Asp Arg Thr Val His Gly Val Ser Pro Gln Gly Phe
                140
Gln Trp Ser Gly Cys Ser Asp Asn Ile Ala Tyr Gly Val Ala Phe
                155
Ser Gln Ser Phe Val Asp Val Arg Glu Arg Ser Lys Gly Ala Ser
                                    175
Ser Ser Arg Ala Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg
Lys Ala Ile Leu Thr His Met Arg Val Glu Cys Lys Cys His Gly
                                                         210
                200
Val Ser Gly Ser Cys Glu Val Lys Thr Cys Trp Arg Ala Val Pro
Pro Phe Arg Gln Val Gly His Ala Leu Lys Glu Lys Phe Asp Gly
                230
Ala Thr Glu Val Glu Pro Arg Arg Val Gly Ser Ser Arg Ala Leu
                245
Val Pro Arg Asn Ala Gln Phe Lys Pro His Thr Asp Glu Asp Leu
                260
Val Tyr Leu Glu Pro Ser Pro Asp Phe Cys Glu Gln Asp Met Arg
                275
Ser Gly Val Leu Gly Thr Arg Gly Arg Thr Cys Asn Lys Thr Ser
                290
Lys Ala Ile Asp Gly Cys Glu Leu Leu Cys Cys Gly Arg Gly Phe
His Thr Ala Gln Val Glu Leu Ala Glu Arg Cys Ser Cys Lys Phe
                320
His Trp Cys Cys Phe Val Lys Cys Arg Gln Cys Gln Arg Leu Val
                335
Glu Leu His Thr Cys Arg
                350
```

<210> 227

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 227

gctgcagctg caaattccac tgg 23

```
<210> 228
<211> 28
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 228
tggtgggaga ctgtttaaat tatcggcc 28
<210> 229
<211> 41
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 229
tgcttcgtca agtgccggca gtgccagcgg ctcgtggagt t 41
<210> 230
<211> 1355
<212> DNA
<213> Homo sapiens
<400> 230
 cggacgcgtg ggcggacgcg tgggcggacg cgtgggcgga cgcgtgggct 50
 gggtgcctgc atcgccatgg acaccaccag gtacagcaag tggggcggca 100
 gctccgagga ggtccccgga gggccctggg gacgctgggt gcactggagc 150
 aggagacccc tcttcttggc cctggctgtc ctggtcacca cagtcctttg 200
 ggctgtgatt ctgagtatcc tattgtccaa ggcctccacg gagcgcgcgg 250
 cgctgcttga cggccacgac ctgctgagga caaacgcctc gaagcagacg 300
 gcggcgctgg gtgccctgaa ggaggaggtc ggagactgcc acagctgctg 350
 ctcggggacg caggcgcagc tgcagaccac gcgcgcggag cttggggagg 400
 cgcaggcgaa gctgatggag caggagagcg ccctgcggga actgcgtgag 450
 cgcgtgaccc agggcttggc tgaagccggc aggggccgtg aggacgtccg 500
 cactgagctg ttccgggcgc tggaggccgt gaggctccag aacaactcct 550
 gcgagccgtg ccccacgtcg tggctgtcct tcgagggctc ctgctacttt 600
 ttctctgtgc caaagacgac gtgggcggcg gcgcaggatc actgcgcaga 650
 tgccagcgcg cacctggtga tcgttggggg cctggatgag cagggcttcc 700
 tcactcggaa cacgcgtggc cgtggttact ggctgggcct gagggctgtg 750
```

cgccatctgg gcaaggttca gggctaccag tgggtggacg gagtctctct 800
cagcttcagc cactggaacc agggagagcc caatgacgct tgggggcgcg 850
agaactgtgt catgatgctg cacacggggc tgtggaacga cgcaccgtgt 900
gacagcgaga aggacggctg gatctgtgag aaaaggcaca actgctgacc 950
ccgcccagtg ccctggagcc gcgcccattg cagcatgtcg tatcctgggg 1000
gctgctcacc tccctggctc ctggagctga ttgccaaaga gttttttct 1050
tcctcatcca ccgctgctga gtctcagaaa cacttggccc aacatagccc 1100
tgtccagccc agtgcctggg ctctgggacc tccatgccga cctcatccta 1150
actccactca cgcagaccca acctaacctc cactagctcc aaaatccctg 1200
ctcctgcgtc cccgtgatat gcctccactt ctccctaa ccaaggttag 1250
gtgactgagg actggagctg tttggtttc tcgcatttc caccaaactg 1300
gaagctgtt ttgcagcctg aggaagcatc aataaatat tgagaaatga 1350
aaaaa 1355

<210> 231

<211> 293

<212> PRT

<213> Homo sapiens

<400> 231

Met Asp Thr Thr Arg Tyr Ser Lys Trp Gly Gly Ser Ser Glu Glu 1 5 10 15

Val Pro Gly Gly Pro Trp Gly Arg Trp Val His Trp Ser Arg Arg 20 25 30

Pro Leu Phe Leu Ala Leu Ala Val Leu Val Thr Thr Val Leu Trp 35 40 45

Ala Val Ile Leu Ser Ile Leu Leu Ser Lys Ala Ser Thr Glu Arg
50 55 60

Ala Ala Leu Leu Asp Gly His Asp Leu Leu Arg Thr Asn Ala Ser 65 70 75

Lys Gln Thr Ala Ala Leu Gly Ala Leu Lys Glu Glu Val Gly Asp 80 85 90

Cys His Ser Cys Cys Ser Gly Thr Gln Ala Gln Leu Gln Thr Thr 95 100 105

Arg Ala Glu Leu Gly Glu Ala Gln Ala Lys Leu Met Glu Gln Glu
110 115 120

Ser Ala Leu Arg Glu Leu Arg Glu Arg Val Thr Gln Gly Leu Ala 125 130 135

```
Glu Ala Gly Arg Gly Arg Glu Asp Val Arg Thr Glu Leu Phe Arg
Ala Leu Glu Ala Val Arg Leu Gln Asn Asn Ser Cys Glu Pro Cys
                 155
Pro Thr Ser Trp Leu Ser Phe Glu Gly Ser Cys Tyr Phe Phe Ser
                 170
Val Pro Lys Thr Trp Ala Ala Ala Gln Asp His Cys Ala Asp
                 185
Ala Ser Ala His Leu Val Ile Val Gly Gly Leu Asp Glu Gln Gly
Phe Leu Thr Arg Asn Thr Arg Gly Arg Gly Tyr Trp Leu Gly Leu
Arg Ala Val Arg His Leu Gly Lys Val Gln Gly Tyr Gln Trp Val
Asp Gly Val Ser Leu Ser Phe Ser His Trp Asn Gln Gly Glu Pro
                 245
Asn Asp Ala Trp Gly Arg Glu Asn Cys Val Met Met Leu His Thr
                 260
Gly Leu Trp Asn Asp Ala Pro Cys Asp Ser Glu Lys Asp Gly Trp
                                                          285
                 275
 Ile Cys Glu Lys Arg His Asn Cys
                 290
<210> 232
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 232
 gcgagaactg tgtcatgatg ctgc 24
<210> 233
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 233
gtttctgaga ctcagcagcg gtgg 24
<210> 234
<211> 50
<212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 234
caccgtgtga cagcgagaag gacggctgga tctgtgagaa aaggcacaac 50
<210> 235
<211> 1847
<212> DNA
<213> Homo sapiens
<400> 235
 qccaqqqqaa qaqqqtqatc cqacccqqqq aaqqtcqctq qqcaqqqcqa 50
 qttqqqaaaq cqqcaqcccc cqccqccccc qcaqcccctt ctcctccttt 100
 ctcccacgtc ctatctgcct ctcgctggag gccaggccgt gcagcatcga 150
 agacaggagg aactggagcc tcattggccg gcccggggcg ccggcctcgg 200
 gettaaatag gageteeggg etetggetgg gaceegaceg etgeeggeeg 250
 egeteeeget geteetgeeg ggtgatggaa aaccccagee eggeegeege 300
 cctgggcaag gccctctgcg ctctcctcct ggccactctc ggcgccgccg 350
 gccagcctct tqqqqqagag tccatctqtt ccgccagagc cccggccaaa 400
 tacaqcatca ccttcacqqq caaqtqqaqc caqacqqcct tccccaaqca 450
 gtaccccctg ttccgcccc ctgcgcagtg gtcttcgctg ctgggggccg 500
 cgcatagctc cgactacagc atgtggagga agaaccagta cgtcagtaac 550
 gggctgcgcg actttgcgga gcgcggcgag gcctgggcgc tgatgaagga 600
 gatcgaggcg gcgggggagg cgctgcagag cgtgcacgag gtgttttcgg 650
 cgcccgccgt ccccagcggc accgggcaga cgtcggcgga gctggaggtg 700
 cagcgcaggc actcgctggt ctcgtttgtg gtgcgcatcg tgcccagccc 750
 cgactggttc gtgggcgtgg acagcctgga cctgtgcgac ggggaccgtt 800
 ggcgggaaca ggcggcgctg gacctgtacc cctacgacgc cgggacggac 850
 agcggcttca ccttctcctc ccccaacttc gccaccatcc cgcaggacac 900
 ggtgaccgag ataacgtcct cctctcccag ccacccggcc aactccttct 950
 actaccegeg getgaaggee etgeeteeca tegecagggt gaeactgetg 1000
 eggetgegae agageeceag ggeetteate ecteeegeee eagteetgee 1050
 cagcagggac aatgagattg tagacagcgc ctcagttcca gaaacgccgc 1100
```

<210> 236

<211> 331

<212> PRT

<213> Homo sapiens

<400> 236

Met Glu Asn Pro Ser Pro Ala Ala Ala Leu Gly Lys Ala Leu Cys 1 5 10 15

Ala Leu Leu Leu Ala Thr Leu Gly Ala Ala Gly Gln Pro Leu Gly 20 25 30

Gly Glu Ser Ile Cys Ser Ala Arg Ala Pro Ala Lys Tyr Ser Ile 35 40 45

Thr Phe Thr Gly Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln Tyr 50 55 60

Pro Leu Phe Arg Pro Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala 65 70 75

Ala His Ser Ser Asp Tyr Ser Met Trp Arg Lys Asn Gln Tyr Val 80 90

Ser Asn Gly Leu Arg Asp Phe Ala Glu Arg Gly Glu Ala Trp Ala 95 100 105

Leu Met Lys Glu Ile Glu Ala Ala Gly Glu Ala Leu Gln Ser Val

				110					115					120
His	Glu	Val	Phe	Ser 125	Ala	Pro	Ala	Val	Pro 130	Ser	Gly	Thr	Gly	Gln 135
Thr	Ser	Ala	Glu	Leu 140	Glu	Val	Gln	Arg	Arg 145	His	Ser	Leu	Val	Ser 150
Phe	Val	Val	Arg	Ile 155	Val	Pro	Ser	Pro	Asp 160	Trp	Phe	Val	Gly	Val 165
Asp	Ser	Leu	Asp	Leu 170	Cys	Asp	Gly	Asp	Arg 175	Trp	Arg	Glu	Gln	Ala 180
Ala	Leu	Asp	Leu	Tyr 185	Pro	Tyr	Asp	Ala	Gly 190	Thr	Asp	Ser	Gly	Phe 195
Thr	Phe	Ser	Ser	Pro 200	Asn	Phe	Ala	Thr	Ile 205	Pro	Gln	Asp	Thr	Val 210
Thr	Glu	Ile	Thr	Ser 215	Ser	Ser	Pro	Ser	His 220	Pro	Ala	Asn	Ser	Phe 225
Tyr	Tyr	Pro	Arg	Leu 230	Lys	Ala	Leu	Pro	Pro 235	Ile	Ala	Arg	Val	Thr 240
Leu	Leu	Arg	Leu	Arg 245	Gln	Ser	Pro	Arg	Ala 250	Phe	Ile	Pro	Pro	Ala 255
Pro	Val	Leu	Pro	Ser 260	Arg	Asp	Asn	Glu	Ile 265	Val	Asp	Ser	Ala	Ser 270
Val	Pro	Glu	Thr	Pro 275	Leu	Asp	Cys	Glu	Val 280	Ser	Leu	Trp	Ser	Ser 285
Trp	Gly	Leu	Cys	Gly 290	Gly	His	Cys	Gly	Arg 295	Leu	Gly	Thr	Lys	Ser 300
Arg	Thr	Arg	Tyr	Val 305	Arg	Val	Gln	Pro	Ala 310	Asn	Asn	Gly	Ser	Pro 315
Cys	Pro	Glu	Leu	Glu 320	Glu	Glu	Ala	Glu	Cys 325	Val	Pro	Asp	Asn	Cys 330
Val														
<210> <211> <212> <213>	> 22 > DNZ	Ŧ	cial	Sequ	ience	.								
<220> <223>		nthet	cic o	oligo	onuc]	leoti	lde p	orobe)	•				
<400> cago		7 gcc a	aggg	gaaga	ag gg	g 22								

```
<210> 238
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 238
caggactcgc tacgtccg 18
<210> 239
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 239
cageceette teeteettte teee 24
<210> 240
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 240
gcagttatca gggacgcact cagcc 25
<210> 241
<211> 18
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 241
 ccagcgagag gcagatag 18
<210> 242
<211> 23
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 242
 cggtcaccgt gtcctgcggg atg 23
<210> 243
<211> 42
<212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 243
cagococttc toctoctttc toccacgtcc tatotgcctc to 42
<210> 244
<211> 1894
<212> DNA
<213> Homo sapiens
<400> 244
ggcggcgtcc gtgaggggct cctttgggca ggggtagtgt ttggtqtccc 50
tgtcttgcgt gatattgaca aactgaagct ttcctgcacc actggactta 100
aggaagagtg tactcgtagg cggacagctt tagtggccgg ccggccgctc 150
tcatcccccg taaggagcag agtcctttgt actgaccaag atgagcaaca 200
tctacatcca ggagcctccc acgaatggga aggttttatt gaaaactaca 250
gctggagata ttgacataga gttgtggtcc aaagaagctc ctaaagcttg 300
cagaaatttt atccaacttt gtttggaagc ttattatgac aataccattt 350
ttcatagagt tgtgcctggt ttcatagtcc aaggcggaga tcctactggc 400
acagggagtg gtggagagtc tatctatgga gcgccattca aagatgaatt 450
tcattcacgg ttgcgtttta atcggagagg actggttgcc atggcaaatg 500
ctggttctca tgataatggc agccagtttt tcttcacact gggtcgagca 550
gatgaactta acaataagca taccatcttt ggaaaggtta caggggatac 600
agtatataac atgttgcgac tgtcagaagt agacattgat gatgacgaaa 650
gaccacataa tccacacaaa ataaaaagct gtgaggtttt gtttaatcct 700
tttgatgaca tcattccaag ggaaattaaa aggctgaaaa aagagaaacc 750
agaggaggaa gtaaagaaat tgaaacccaa aggcacaaaa aattttagtt 800
tactttcatt tggagaggaa gctgaggaag aagaggagga agtaaatcga 850
gttagtcaga gcatgaaggg caaaagcaaa agtagtcatg acttgcttaa 900
ggatgatcca catctcagtt ctgttccagt tgtagaaagt gaaaaaggtg 950
atgcaccaga tttagttgat gatggagaag atgaaagtgc agagcatgat 1000
gaatatattg atggtgatga aaagaacctg atgagagaaa gaattgccaa 1050
```

aaaattaaaa aaggacacaa gtgcgaatgt taaatcagct ggagaaggag 1100

aaqtggagaa gaaatcagtc aqccgcagtg aaqagctcag aaaagaagca 1150 agacaattaa aacgggaact cttagcagca aaacaaaaaa aagtagaaaa 1200 tgcagcaaaa caagcagaaa aaagaagtga agaggaagaa gcccctccag 1250 atggtgctgt tgccgaatac agaagagaaa agcaaaagta tgaagctttg 1300 aggaagcaac agtcaaagaa gggaacttcc cgggaagatc agacccttgc 1350 actgctgaac cagtttaaat ctaaactcac tcaagcaatt gctgaaacac 1400 ctgaaaatga cattcctgaa acagaagtag aagatgatga aggatggatg 1450 tcacatgtac ttcagtttga ggataaaagc agaaaagtga aagatgcaag 1500 catgcaagac tcagatacat ttgaaatcta tgatcctcgg aatccagtga 1550 ataaaagaag gagggaagaa agcaaaaagc tgatgagaga gaaaaaagaa 1600 agaagataaa atgagaataa tgataaccag aacttgctgg aaatgtgcct 1650 acaatggcct tgtaacagcc attgttccca acagcatcac ttaggggtgt 1700 gaaaagaagt atttttgaac ctgttgtctg gttttgaaaa acaattatct 1750 tgttttgcaa attgtggaat gatgtaagca aatgcttttg gttactggta 1800 catgtgtttt ttcctagctg accttttata ttgctaaatc tgaaataaaa 1850

<210> 245

<211> 472

<212> PRT

<213> Homo sapiens

<400> 245

Met Ser Asn Ile Tyr Ile Gln Glu Pro Pro Thr Asn Gly Lys Val
1 5 10 15

Leu Leu Lys Thr Thr Ala Gly Asp Ile Asp Ile Glu Leu Trp Ser
20 25 30

Lys Glu Ala Pro Lys Ala Cys Arg Asn Phe Ile Gln Leu Cys Leu 35 40 45

Glu Ala Tyr Tyr Asp Asn Thr Ile Phe His Arg Val Val Pro Gly
50 55 60

Phe Ile Val Gln Gly Gly Asp Pro Thr Gly Thr Gly Ser Gly Gly 65 70 75

Glu Ser Ile Tyr Gly Ala Pro Phe Lys Asp Glu Phe His Ser Arg 80 85 90

Leu Arg Phe Asn Arg Arg Gly Leu Val Ala Met Ala Asn Ala Gly 95 100 105

Ser His Asp Asn Gly Ser Gln Phe Phe Phe Thr Leu Gly Arg Ala Asp Glu Leu Asn Asn Lys His Thr Ile Phe Gly Lys Val Thr Gly 130 125 135 Asp Thr Val Tyr Asn Met Leu Arg Leu Ser Glu Val Asp Ile Asp 140 Asp Asp Glu Arg Pro His Asn Pro His Lys Ile Lys Ser Cys Glu 155 Val Leu Phe Asn Pro Phe Asp Asp Ile Ile Pro Arg Glu Ile Lys Arg Leu Lys Lys Glu Lys Pro Glu Glu Glu Val Lys Lys Leu Lys Pro Lys Gly Thr Lys Asn Phe Ser Leu Leu Ser Phe Gly Glu Glu Ala Glu Glu Glu Glu Glu Val Asn Arg Val Ser Gln Ser Met 215 Lys Gly Lys Ser Lys Ser Ser His Asp Leu Leu Lys Asp Asp Pro 230 His Leu Ser Ser Val Pro Val Val Glu Ser Glu Lys Gly Asp Ala 245 Pro Asp Leu Val Asp Asp Gly Glu Asp Glu Ser Ala Glu His Asp Glu Tyr Ile Asp Gly Asp Glu Lys Asn Leu Met Arg Glu Arg Ile 285 Ala Lys Lys Leu Lys Lys Asp Thr Ser Ala Asn Val Lys Ser Ala Gly Glu Gly Glu Val Glu Lys Lys Ser Val Ser Arg Ser Glu Glu Leu Arg Lys Glu Ala Arg Gln Leu Lys Arg Glu Leu Leu Ala Ala Lys Gln Lys Lys Val Glu Asn Ala Ala Lys Gln Ala Glu Lys Arg Ser Glu Glu Glu Ala Pro Pro Asp Gly Ala Val Ala Glu Tyr Arg Arg Glu Lys Gln Lys Tyr Glu Ala Leu Arg Lys Gln Gln Ser Lys Lys Gly Thr Ser Arg Glu Asp Gln Thr Leu Ala Leu Leu Asn Gln Phe Lys Ser Lys Leu Thr Gln Ala Ile Ala Glu Thr Pro Glu

395 400 405 Asn Asp Ile Pro Glu Thr Glu Val Glu Asp Asp Glu Gly Trp Met Ser His Val Leu Gln Phe Glu Asp Lys Ser Arg Lys Val Lys Asp 425 430 435 Ala Ser Met Gln Asp Ser Asp Thr Phe Glu Ile Tyr Asp Pro Arg 440 445 Asn Pro Val Asn Lys Arg Arg Glu Glu Ser Lys Leu Met 455 465 Arg Glu Lys Lys Glu Arg Arg 470 <210> 246 <211> 24 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 246 tgcggagatc ctactggcac aggg 24 <210> 247 <211> 18 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 247 cgagttagtc agagcatg 18 <210> 248 <211> 18 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 248 cagatggtgc tgttgccg 18 <210> 249 <211> 29 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe

```
<400> 249
 caactggaac aggaactgag atgtggatc 29
<210> 250
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 250
 ctggttcagc agtgcaaggg tctg 24
<210> 251
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 251
cctctccgat taaaacgc 18
<210> 252
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
gagaggactg gttgccatgg caaatgctgg ttctcatgat aatgg 45
<210> 253
<211> 2456
<212> DNA
<213> Homo sapiens
<400> 253
cgccgccgtt ggggctggaa gttcccgcca ggtccgtqcc gggcqaqaqa 50
gatgctgccc ggcccgcctc ggctttgagg cgagagaagt gtcccagacc 100
catttcgcct tgctgacggc gtcgagccct ggccagacat gtccacaggg 150
 ttctccttcg ggtccgggac tctgggctcc accaccgtgg ccgccggcgg 200
 gaccagcaca ggcggcgttt tctccttcgg aacgggaacg tctagcaacc 250
cttctgtggg gctcaatttt ggaaatcttg gaagtacttc aactccagca 300
actacatctg ctccttcaag tggttttgga accgggctct ttggatctaa 350
acctgccact gggttcactc taggaggaac aaatacaggt gccttgcaca 400
```

ccaagaggcc tcaagtggtc accaaatatg gaaccctgca aggaaaacag 450 atgcatgtgg ggaagacacc catccaagtc tttttaggag tccccttctc 500 cagacetect etaggtatee teaggtttge acetecagaa ecceeggage 550 cctggaaagg aatcagagat gctaccacct acccgcctgg atggagtctc 600 gctctgtcgc caggctggag tgcagtggca cgatctcggc tcactgcaac 650 ctccgcctcc cgggttcaag cgagtctcct gcctcagcct ctgagtgtct 700 ggggctacag gtgcctgcag gagtcctggg gccagctggc ctcgatgtac 750 gtcagcacgc gggaacggta caagtggctg cgcttcagcg aggactgtct 800 gtacctgaac gtgtacgcgc cggcgcgcgc gcccggggat ccccagctgc 850 cagtgatggt ctggttcccg ggaggcgcct tcatcgtggg cgctgcttct 900 tcgtacgagg gctctgactt ggccgcccgc gagaaagtgg tgctggtgtt 950 tctgcagcac aggctcggca tcttcggctt cctgagcacg gacgacagcc 1000 acgcgcgcgg gaactggggg ctgctggacc agatggcggc tctgcgctgg 1050 gtgcaggaga acatcgcagc cttcggggga gacccaggaa atgtgaccct 1100 gttcggccag tcggcggggg ccatgagcat ctcaggactg atgatgtcac 1150 ccctagcctc gggtctcttc catcgggcca tttcccagag tggcaccgcg 1200 ttattcagac ttttcatcac tagtaaccca ctgaaagtgg ccaagaaggt 1250 tgcccacctg gctggatgca accacaacag cacacagatc ctggtaaact 1300 gcctgagggc actatcaggg accaaggtga tgcgtgtgtc caacaagatg 1350 agattectee aactgaactt eeagagagae eeggaagaga ttatetggte 1400 catgagecet gtggtggatg gtgtggtgat eccagatgae eetttggtge 1450 tcctgaccca ggggaaggtt tcatctgtgc cctaccttct aggtgtcaac 1500 aacctggaat tcaattggct cttgccttat aatatcacca aggagcaggt 1550 accacttgtg gtggaggagt acctggacaa tgtcaatgag catgactgga 1600 agatgctacg aaaccgtatg atggacatag ttcaagatgc cactttcgtg 1650 tatgccacac tgcagactgc tcactaccac cgagaaaccc caatgatggg 1700 aatctgccct gctggccacg ctacaacaag gatgaaaagt acctgcagct 1750 ggattttacc acaagagtgg gcatgaagct caaggagaag aagatggctt 1800 tttggatgag tctgtaccag tctcaaagac ctgagaagca gaggcaattc 1850

<210> 254

<211> 545

<212> PRT

<213> Homo sapiens

<400> 254

Met Ser Thr Gly Phe Ser Phe Gly Ser Gly Thr Leu Gly Ser Thr 1 5 10 15

Thr Val Ala Ala Gly Gly Thr Ser Thr Gly Gly Val Phe Ser Phe 20 25 30

Gly Thr Gly Thr Ser Ser Asn Pro Ser Val Gly Leu Asn Phe Gly
35 40 45

Asn Leu Gly Ser Thr Ser Thr Pro Ala Thr Thr Ser Ala Pro Ser 50 55 60

Ser Gly Phe Gly Thr Gly Leu Phe Gly Ser Lys Pro Ala Thr Gly 65 70 75

Phe Thr Leu Gly Gly Thr Asn Thr Gly Ala Leu His Thr Lys Arg 80 85 90

Pro Gln Val Val Thr Lys Tyr Gly Thr Leu Gln Gly Lys Gln Met 95 100 105

His Val Gly Lys Thr Pro Ile Gln Val Phe Leu Gly Val Pro Phe 110 115 120

Ser Arg Pro Pro Leu Gly Ile Leu Arg Phe Ala Pro Pro Glu Pro 125 130 135

Pro Glu Pro Trp Lys Gly Ile Arg Asp Ala Thr Thr Tyr Pro Pro Gly Trp Ser Leu Ala Leu Ser Pro Gly Trp Ser Ala Val Ala Arg Ser Arg Leu Thr Ala Thr Ser Ala Ser Arg Val Gln Ala Ser Leu 170 Leu Pro Gln Pro Leu Ser Val Trp Gly Tyr Arg Cys Leu Gln Glu 185 Ser Trp Gly Gln Leu Ala Ser Met Tyr Val Ser Thr Arg Glu Arg 200 Tyr Lys Trp Leu Arg Phe Ser Glu Asp Cys Leu Tyr Leu Asn Val 215 225 Tyr Ala Pro Ala Arg Ala Pro Gly Asp Pro Gln Leu Pro Val Met Val Trp Phe Pro Gly Gly Ala Phe Ile Val Gly Ala Ala Ser Ser Tyr Glu Gly Ser Asp Leu Ala Ala Arg Glu Lys Val Val Leu Val Phe Leu Gln His Arg Leu Gly Ile Phe Gly Phe Leu Ser Thr Asp Asp Ser His Ala Arg Gly Asn Trp Gly Leu Leu Asp Gln Met Ala Ala Leu Arg Trp Val Gln Glu Asn Ile Ala Ala Phe Gly Gly Asp Pro Gly Asn Val Thr Leu Phe Gly Gln Ser Ala Gly Ala Met Ser Ile Ser Gly Leu Met Met Ser Pro Leu Ala Ser Gly Leu Phe His Arg Ala Ile Ser Gln Ser Gly Thr Ala Leu Phe Arg Leu Phe Ile Thr Ser Asn Pro Leu Lys Val Ala Lys Lys Val Ala His Leu Ala 375 Gly Cys Asn His Asn Ser Thr Gln Ile Leu Val Asn Cys Leu Arg Ala Leu Ser Gly Thr Lys Val Met Arg Val Ser Asn Lys Met Arg Phe Leu Gln Leu Asn Phe Gln Arg Asp Pro Glu Glu Ile Ile Trp Ser Met Ser Pro Val Val Asp Gly Val Val Ile Pro Asp Asp Pro

				425					430					435
Leu '	Val	Leu	Leu	Thr 440	Gln	Gly	Lys	Val	Ser 445	Ser	Val	Pro	Tyr	Leu 450
Leu (Gly	Val	Asn	Asn 455	Leu	Glu	Phe	Asn	Trp 460	Leu	Leu	Pro	Tyr	Asn 465
Ile :	Thr	Lys	Glu	Gln 470	Val	Pro	Leu	Val	Val 475	Glu	Glu	Tyr	Leu	Asp 480
Asn V	Val	Asn	Glu	His 485	Asp	Trp	Lys	Met	Leu 490	Arg	Asn	Arg	Met	Met 495
Asp :	Ile	Val	Gln	Asp 500	Ala	Thr	Phe	Val	Tyr 505	Ala	Thr	Leu	Gln	Thr 510
Ala I	His	Tyr	His	Arg 515	Glu	Thr	Pro	Met	Met 520	Gly	Ile	Cys	Pro	Ala 525
Gly I	His	Ala	Thr	Thr 530	Arg	Met	Lys	Ser	Thr 535	Cys	Ser	Trp	Ile	Leu 540
Pro (Gln	Glu	Trp	Ala 545										
<210> 255 <211> 23 <212> DNA <213> Artificial Sequence														
<220> <223> Synthetic oligonucleotide probe														
<400>	<223> Synthetic oligonucleotide probe <400> 255 aggtgcctgc aggagtcctg ggg 23													
<210> 256 <211> 24 <212> DNA <213> Artificial Sequence														
<220> <223> Synthetic oligonucleotide probe														
<400> 256 ccacctcagg aagccgaaga tgcc 24														
<210> <211> <212> <213>	45 DNA	Δ	cial	Seqi	ience	e								
<220> <223>	Syn	thet	ic c	oligo	nucl	_eoti	.de p	orobe)					
<400> 257 gaacggtaca agtggctgcg cttcagcgag gactgtctgt acctg 45														

```
<210> 258
<211> 2764
<212> DNA
```

<213> Homo sapiens

<400> 258 gagaacaggc ctgtctcagg caggccctgc gcctcctatg cggagatgct 50 actgccactg ctgctgtcct cgctgctggg cgggtcccag gctatggatg 100 ggagattctg gatacgagtg caggagtcag tgatggtgcc ggagggcctg 150 tgcatctctg tgccctgctc tttctcctac ccccgacaag actggacagg 200 gtctacccca gcttatggct actggttcaa agcagtgact gagacaacca 250 agggtgctcc tgtggccaca aaccaccaga gtcgagaggt ggaaatgagc 300 accoggggcc gattccagct cactggggat cccgccaagg ggaactgctc 350 cttggtgatc agagacgcgc agatgcagga tgagtcacag tacttctttc 400 gggtggagag aggaagctat gtgacatata atttcatgaa cgatgggttc 450 tttctaaaag taacagtgct cagcttcacg cccagacccc aggaccacaa 500 caccgacctc acctgccatg tggacttctc cagaaagggt gtgagcgcac 550 agaggaccgt ccgactccgt gtggcctatg cccccagaga ccttgttatc 600 agcatttcac gtgacaacac gccagccctg gagccccagc cccagggaaa 650 tgtcccatac ctggaagccc aaaaaggcca gttcctgcgg ctcctctgtg 700 ctgctgacag ccagcccct gccacactga gctgggtcct gcagaacaga 750 gtcctctcct cgtcccatcc ctggggccct agacccctgg ggctggagct 800 gcccggggtg aaggctgggg attcagggcg ctacacctgc cgagcggaga 850 acaggettgg eteccageag egageeetgg acetetetgt geagtateet 900 ccagagaacc tgagagtgat ggtttcccaa gcaaacagga cagtcctgga 950 aaaccttggg aacggcacgt ctctcccagt actggagggc caaagcctgt 1000 gcctggtctg tgtcacacac agcagccccc cagccaggct gagctggacc 1050 cagaggggac aggttctgag ccctcccag ccctcagacc ccggggtcct 1100 ggagctgcct cgggttcaag tggagcacga aggagagttc acctgccacg 1150 cteggeacce actgggetee cageacgtet eteteageet eteegtgeac 1200 tataagaagg gactcatctc aacggcattc tccaacggag cgtttctggg 1250 aatcggcatc acggctcttc ttttcctctg cctggccctg atcatcatga 1300

agattctacc gaagagacgg actcagacag aaaccccgag gcccaggttc 1350 teceggeaca geacgatest ggattacate aatgtggtee egacggetgg 1400 ccccctggct cagaagcgga atcagaaagc cacaccaaac agtcctcgga 1450 cccctcctcc accaggtgct ccctccccag aatcaaagaa gaaccagaaa 1500 aagcagtatc agttgcccag tttcccagaa cccaaatcat ccactcaagc 1550 cccagaatcc caggagagcc aagaggagct ccattatgcc acgctcaact 1600 teccaggegt cagacecagg cetgaggeee ggatgeecaa gggeaeceag 1650 gcggattatg cagaagtcaa gttccaatga gggtctctta ggctttagga 1700 ctgggacttc ggctagggag gaaggtagag taagaggttg aagataacag 1750 agtgcaaagt ttccttctct ccctctctct ctctctttct ctctctctct 1800 ctctttctct ctcttttaaa aaaacatctg gccagggcac agtggctcac 1850 gcctgtaatc ccagcacttt gggaggttga ggtgggcaga tcgcctgagg 1900 tcgggagttc gagaccagcc tggccaactt ggtgaaaccc cgtctctact 1950 aaaaatacaa aaattagctg ggcatggtgg caggcgcctg taatcctacc 2000 tacttgggaa gctgaggcag gagaatcact tgaacctggg agacggaggt 2050 tgcagtgagc caagatcaca ccattgcacg ccagcctggg caacaaagcg 2100 agactccatc tcaaaaaaaa aatcctccaa atgggttggg tgtctgtaat 2150 cccagcactt tgggaggcta aggtgggtgg attgcttgag cccaggagtt 2200 cgagaccagc ctgggcaaca tggtgaaacc ccatctctac aaaaaataca 2250 aaacatagct gggcttggtg gtgtgtgcct gtagtcccag ctgtcagaca 2300 tttaaaccag agcaactcca tctggaatag gagctgaata aaatgaggct 2350 gagacctact gggctgcatt ctcagacagt ggaggcattc taagtcacag 2400 gatgagacag gaggtccgta caagatacag gtcataaaga ctttgctgat 2450 aaaacagatt gcagtaaaga agccaaccaa atcccaccaa aaccaagttg 2500 gccacgagag tgacctctgg tcgtcctcac tgctacactc ctgacagcac 2550 catgacagtt tacaaatgcc atggcaacat caggaagtta cccgatatgt 2600 cccaaaaggg ggaggaatga ataatccacc ccttgtttag caaataagca 2650 agaaataacc ataaaagtgg gcaaccagca gctctaggcg ctgctcttgt 2700 ctatggagta gccattcttt tgttccttta ctttcttaat aaacttgctt 2750

<210> 259

<211> 544

<212> PRT

<213> Homo sapiens

<400> 259

Met Leu Leu Pro Leu Leu Ser Ser Leu Leu Gly Gly Ser Gln 1 5 10 15

Ala Met Asp Gly Arg Phe Trp Ile Arg Val Gln Glu Ser Val Met 20 25 30

Val Pro Glu Gly Leu Cys Ile Ser Val Pro Cys Ser Phe Ser Tyr 35 40 45

Pro Arg Gln Asp Trp Thr Gly Ser Thr Pro Ala Tyr Gly Tyr Trp
50 55 60

Phe Lys Ala Val Thr Glu Thr Thr Lys Gly Ala Pro Val Ala Thr 65 70 75

Asn His Gln Ser Arg Glu Val Glu Met Ser Thr Arg Gly Arg Phe 80 85 90

Gln Leu Thr Gly Asp Pro Ala Lys Gly Asn Cys Ser Leu Val Ile 95 100 105

Arg Asp Ala Gln Met Gln Asp Glu Ser Gln Tyr Phe Phe Arg Val 110 115 120

Glu Arg Gly Ser Tyr Val Thr Tyr Asn Phe Met Asn Asp Gly Phe 125 130 135

Phe Leu Lys Val Thr Val Leu Ser Phe Thr Pro Arg Pro Gln Asp 140 145 150

His Asn Thr Asp Leu Thr Cys His Val Asp Phe Ser Arg Lys Gly
155 160 165

Val Ser Ala Gln Arg Thr Val Arg Leu Arg Val Ala Tyr Ala Pro 170 175 180

Arg Asp Leu Val Ile Ser Ile Ser Arg Asp Asn Thr Pro Ala Leu 185 190 195

Glu Pro Gln Pro Gln Gly Asn Val Pro Tyr Leu Glu Ala Gln Lys 200 205 210

Gly Gln Phe Leu Arg Leu Leu Cys Ala Ala Asp Ser Gln Pro Pro 215 220 225

Ala Thr Leu Ser Trp Val Leu Gln Asn Arg Val Leu Ser Ser Ser 230 235 240

His Pro Trp Gly Pro Arg Pro Leu Gly Leu Glu Leu Pro Gly Val 245 250 255

Lys	Ala	Gly	Asp	Ser 260	Gly	Arg	Tyr	Thr	Cys 265	Arg	Ala	Glu	Asn	Arg 270
Leu	Gly	Ser	Gln	Gln 275	Arg	Ala	Leu	Asp	Leu 280	Ser	Val	Gln	Tyr	Pro 285
Pro	Glu	Asn	Leu	Arg 290	Val	Met	Val	Ser	Gln 295	Ala	Asn	Arg	Thr	Val 300
Leu	Glu	Asn	Leu	Gly 305	Asn	Gly	Thr	Ser	Leu 310	Pro	Val	Leu	Glu	Gly 315
Gln	Ser	Leu	Cys	Leu 320	Val	Суз	Val	Thr	His 325	Ser	Ser	Pro	Pro	Ala 330
Arg	Leu	Ser	Trp	Thr 335	Gln	Arg	Gly	Gln	Val 340	Leu	Ser	Pro	Ser	Gln 345
Pro	Ser	Asp	Pro	Gly 350	Val	Leu	Glu	Leu	Pro 355	Arg	Val	Gln	Val	Glu 360
His	Glu	Gly	Glu	Phe 365	Thr	Cys	His	Ala	Arg 370	His	Pro	Leu	Gly	Ser 375
Gln	His	Val	Ser	Leu 380	Ser	Leu	Ser	Val	His 385	Tyr	Lys	Lys	Gly	Leu 390
Ile	Ser	Thr	Ala	Phe 395	Ser	Asn	Gly	Ala	Phe 400	Leu	Gly	Ile	Gly	Ile 405
Thr	Ala	Leu	Leu	Phe 410	Leu	Суз	Leu	Ala	Leu 415	Ile	Ile	Met	Lys	Ile 420
Leu	Pro	Lys	Arg	Arg 425	Thr	Gln	Thr	Glu	Thr 430	Pro	Arg	Pro	Arg	Phe 435
Ser	Arg	His	Ser	Thr 440	Ile	Leu	Asp	Tyr	Ile 445	Asn	Val	Val	Pro	Thr 450
Ala	Gly	Pro	Leu	Ala 455	Gln	Lys	Arg	Asn	Gln 460	Lys	Ala	Thr	Pro	Asn 465
Ser	Pro	Arg	Thr	Pro 470	Pro	Pro	Pro	Gly	Ala 475	Pro	Ser	Pro	Glu	Ser 480
Lys	Lys	Asn	Gln	Lys 485	Lys	Gln	Tyr	Gln	Leu 490	Pro	Ser	Phe	Pro	Glu 495
Pro	Lys	Ser	Ser	Thr 500	Gln	Ala	Pro	Glu	Ser 505	Gln	Glu	Ser	Gln	Glu 510
Glu	Leu	His	Tyr	Ala 515	Thr	Leu	Asn	Phe	Pro 520	Gly	Val	Arg	Pro	Arg 525
Pro	Glu	Ala	Arg	Met 530	Pro	Lys	Gly	Thr	Gln 535	Ala	Asp	Tyr	Ala	Glu 540
Val	Lys	Phe	Gln											

```
<210> 260
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 260
 caaagcctgc gcctggtctg tg 22
<210> 261
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 261
ttctggagcc cagagggtgc tgag 24
<210> 262
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 262
ggagctgcca cccattcaaa tggagcacga aggagagttc acctg 45
<210> 263
<211> 2857
<212> DNA
<213> Homo sapiens
<400> 263
tgaagagtaa tagttggaat caaaagagtc aacgcaatga actgttattt 50
actgctgcgt tttatgttgg gaattcctct cctatggcct tgtcttggag 100
caacagaaaa ctctcaaaca aagaaagtca agcagccagt gcgatctcat 150
ttgagagtga agcgtggctg ggtgtggaac caattttttg taccagagga 200
aatgaatacg actagtcatc acatcggcca gctaagatct gatttagaca 250
atggaaacaa ttctttccag tacaagcttt tgggagctgg agctggaagt 300
acttttatca ttgatgaaag aacaggtgac atatatgcca tacagaagct 350
tgatagagag gagcgatccc tctacatctt aagagcccag gtaatagaca 400
tcgctactgg aagggctgtg gaacctgagt ctgagtttgt catcaaagtt 450
```

tcggatatca atgacaatga accaaaattc ctagatgaac cttatgaggc 500 cattgtacca gagatgtctc cagaaggaac attagttatc caggtgacag 550 caagtgatgc tgacgatccc tcaagtggta ataatgctcg tctcctctac 600 agcttacttc aaggccagcc atatttttct gttgaaccaa caacaggagt 650 cataagaata tottotaaaa tggatagaga actgcaagat gagtattggg 700 taatcattca agccaaggac atgattggtc agccaggagc gttgtctgga 750 acaacaagtg tattaattaa actttcagat gttaatgaca ataagcctat 800 atttaaagaa agtttatacc gcttgactgt ctctgaatct gcacccactg 850 ggacttctat aggaacaatc atggcatatg ataatgacat aggagagaat 900 gcagaaatgg attacagcat tgaagaggat gattcgcaaa catttgacat 950 tattactaat catgaaactc aagaaggaat agttatatta aaaaagaaag 1000 tggattttga gcaccagaac cactacggta ttagagcaaa agttaaaaac 1050 catcatgttc ctgagcagct catgaagtac cacactgagg cttccaccac 1100 tttcattaag atccaggtgg aagatgttga tgagcctcct cttttcctcc 1150 ttccatatta tgtatttgaa gtttttgaag aaaccccaca gggatcattt 1200 gtaggcgtgg tgtctgccac agacccagac aataggaaat ctcctatcag 1250 gtattctatt actaggagca aagtgttcaa tatcaatgat aatggtacaa 1300 tcactacaag taactcactg gatcgtgaaa tcagtgcttg gtacaaccta 1350 agtattacag ccacagaaaa atacaatata gaacagatct cttcgatccc 1400 actgtatgtg caagttetta acateaatga teatgeteet gagttetete 1450 aatactatga gacttatgtt tgtgaaaatg caggctctgg tcaggtaatt 1500 cagactatca gtgcagtgga tagagatgaa tccatagaag agcaccattt 1550 ttactttaat ctatctgtag aagacactaa caattcaagt tttacaatca 1600 tagataatca agataacaca gctgtcattt tgactaatag aactggtttt 1650 aaccttcaag aagaacctgt cttctacatc tccatcttaa ttgccgacaa 1700 tggaatcccg tcacttacaa gtacaaacac ccttaccatc catgtctgtg 1750 actgtggtga cagtgggagc acacagacct gccagtacca ggagcttgtg 1800 ctttccatgg gattcaagac agaagttatc attgctattc tcatttgcat 1850 tatgatcata tttgggttta tttttttgac tttgggttta aaacaacgga 1900

gaaaacagat totatttoot gagaaaagtg aagatttoag agagaatata 1950 ttccaatatg atgatgaagg gggtggagaa gaagatacag aggcctttga 2000 tatagcagag ctgaggagta gtaccataat qcgqqaacqc aaqactcqqa 2050 aaaccacaag cgctgagatc aggagcctat acaggcagtc tttgcaagtt 2100 ggccccgaca gtgccatatt caggaaattc attctggaaa agctcgaaga 2150 agctaatact gatecgtgtg ecectecttt tgatteette cagacetacg 2200 cttttgaggg aacagggtca ttagctggat ccctgagctc cttagaatca 2250 gcagtctctg atcaggatga aagctatgat taccttaatg agttgggacc 2300 tcgctttaaa agattagcat gcatgtttgg ttctgcagtg cagtcaaata 2350 attagggctt tttaccatca aaatttttaa aagtgctaat gtgtattcga 2400 acccaatggt agtcttaaag agttttgtgc cctggctcta tggcggggaa 2450 agccctagtc tatggagttt tctgatttcc ctggagtaaa tactccatgg 2500 ttattttaag ctacctacat gctgtcattg aacagagatg tggggagaaa 2550 tgtaaacaat cagctcacag gcatcaatac aaccagattt gaagtaaaat 2600 aatgtaggaa gatattaaaa gtagatgaga ggacacaaga tqtaqtcqat 2650 ccttatgcga ttatatcatt atttacttag gaaagagtaa aaataccaaa 2700 cgagaaaatt taaaggagca aaaatttgca agtcaaatag aaatgtacaa 2750 atcgagataa catttacatt tctatcatat tgacatgaaa attgaaaatg 2800 tatagtcaga gaaattttca tgaattattc catgaagtat tgtttccttt 2850 atttaaa 2857

<210> 264

<211> 772

<212> PRT

<213> Homo sapiens

<400> 264

Met Asn Cys Tyr Leu Leu Leu Arg Phe Met Leu Gly Ile Pro Leu
1 5 10 15

Leu Trp Pro Cys Leu Gly Ala Thr Glu Asn Ser Gln Thr Lys Lys
20 25 30

Val Lys Gln Pro Val Arg Ser His Leu Arg Val Lys Arg Gly Trp
35 40 45

Val Trp Asn Gln Phe Phe Val Pro Glu Glu Met Asn Thr Thr Ser 50 55 60

His His Ile Gly Gln Leu Arg Ser Asp Leu Asp Asn Gly Asn Asn Ser Phe Gln Tyr Lys Leu Leu Gly Ala Gly Ala Gly Ser Thr Phe Ile Ile Asp Glu Arg Thr Gly Asp Ile Tyr Ala Ile Gln Lys Leu Asp Arg Glu Glu Arg Ser Leu Tyr Ile Leu Arg Ala Gln Val Ile Asp Ile Ala Thr Gly Arg Ala Val Glu Pro Glu Ser Glu Phe Val 125 Ile Lys Val Ser Asp Ile Asn Asp Asn Glu Pro Lys Phe Leu Asp Glu Pro Tyr Glu Ala Ile Val Pro Glu Met Ser Pro Glu Gly Thr Leu Val Ile Gln Val Thr Ala Ser Asp Ala Asp Asp Pro Ser Ser 170 Gly Asn Asn Ala Arg Leu Leu Tyr Ser Leu Leu Gln Gly Gln Pro Tyr Phe Ser Val Glu Pro Thr Thr Gly Val Ile Arg Ile Ser Ser Lys Met Asp Arg Glu Leu Gln Asp Glu Tyr Trp Val Ile Ile Gln Ala Lys Asp Met Ile Gly Gln Pro Gly Ala Leu Ser Gly Thr Thr 230 Ser Val Leu Ile Lys Leu Ser Asp Val Asn Asp Asn Lys Pro Ile Phe Lys Glu Ser Leu Tyr Arg Leu Thr Val Ser Glu Ser Ala Pro Thr Gly Thr Ser Ile Gly Thr Ile Met Ala Tyr Asp Asn Asp Ile Gly Glu Asn Ala Glu Met Asp Tyr Ser Ile Glu Glu Asp Asp Ser 300 Gln Thr Phe Asp Ile Ile Thr Asn His Glu Thr Gln Glu Gly Ile Val Ile Leu Lys Lys Lys Val Asp Phe Glu His Gln Asn His Tyr 330 Gly Ile Arg Ala Lys Val Lys Asn His His Val Pro Glu Gln Leu Met Lys Tyr His Thr Glu Ala Ser Thr Thr Phe Ile Lys Ile Gln

				350					355					360
Val	Glu	Asp	Val	Asp 365	Glu	Pro	Pro	Leu	Phe 370	Leu	Leu	Pro	Tyr	Tyr 375
Val	Phe	Glu	Val	Phe 380	Glu	Glu	Thr	Pro	Gln 385	Gly	Ser	Phe	Val	Gly 390
Val	Val	Ser	Ala	Thr 395	Asp	Pro	Asp	Asn	Arg 400	Lys	Ser	Pro	Ile	Arg 405
Tyr	Ser	Ile	Thr	Arg 410	Ser	Lys	Val	Phe	Asn 415	Ile	Asn	Asp	Asn	Gly 420
Thr	Ile	Thr	Thr	Ser 425	Asn	Ser	Leu	Asp	Arg 430	Glu	Ile	Ser	Ala	Trp 435
Tyr	Asn	Leu	Ser	Ile 440	Thr	Ala	Thr	Glu	Lys 445	Tyr	Asn	Ile	Glu	Gln 450
Ile	Ser	Ser	Ile	Pro 455	Leu	Tyr	Val	Gln	Val 460	Leu	Asn	Ile	Asn	Asp 465
His	Ala	Pro	Glu	Phe 470	Ser	Gln	Tyr	Tyr	Glu 475	Thr	Tyr	Val	Cys	Glu 480
Asn	Ala	Gly	Ser	Gly 485	Gln	Val	Ile	Gln	Thr 490	Ile	Ser	Ala	Val	Asp 495
Arg	Asp	Glu	Ser	Ile 500	Glu	Glu	His	His	Phe 505	Tyr	Phe	Asn	Leu	Ser 510
Val	Glu	Asp	Thr	Asn 515	Asn	Ser	Ser	Phe	Thr 520	Ile	Ile	Asp	Asn	Gln 525
Asp	Asn	Thr	Ala	Val 530	Ile	Leu	Thr	Asn	Arg 535	Thr	Gly	Phe	Asn	Leu 540
Gln	Glu	Glu	Pro	Val 545	Phe	Tyr	Ile	Ser	Ile 550	Leu	Ile	Ala	Asp	Asn 555
Gly	Ile	Pro	Ser	Leu 560	Thr	Ser	Thr	Asn	Thr 565	Leu	Thr	Ile	His	Val 570
Cys	Asp	Cys	Gly	Asp 575	Ser	Gly	Ser	Thr	Gln 580	Thr	Cys	Gln	Tyr	Gln 585
Glu	Leu	Val	Leu	Ser 590	Met	Gly	Phe	Lys	Thr 595	Glu	Val	Ile	Ile	Ala 600
Ile	Leu	Ile	Cys	Ile 605	Met	Ile	Ile	Phe	Gly 610	Phe	Ile	Phe	Leu	Thr 615
Leu	Gly	Leu	Lys	Gln 620	Arg	Arg	Lys	Gln	Ile 625	Leu	Phe	Pro	Glu	Lys 630
Ser	Glu	Asp	Phe	Arg 635	Glu	Asn	Ile	Phe	Gln 640	Tyr	Asp	Asp	Glu	Gly 645

```
Gly Gly Glu Glu Asp Thr Glu Ala Phe Asp Ile Ala Glu Leu Arg
Ser Ser Thr Ile Met Arg Glu Arg Lys Thr Arg Lys Thr Thr Ser
                665
                                     670
Ala Glu Ile Arg Ser Leu Tyr Arg Gln Ser Leu Gln Val Gly Pro
                680
                                     685
Asp Ser Ala Ile Phe Arg Lys Phe Ile Leu Glu Lys Leu Glu Glu
Ala Asn Thr Asp Pro Cys Ala Pro Pro Phe Asp Ser Leu Gln Thr
Tyr Ala Phe Glu Gly Thr Gly Ser Leu Ala Gly Ser Leu Ser Ser
Leu Glu Ser Ala Val Ser Asp Gln Asp Glu Ser Tyr Asp Tyr Leu
Asn Glu Leu Gly Pro Arg Phe Lys Arg Leu Ala Cys Met Phe Gly
                                                         765
Ser Ala Val Gln Ser Asn Asn
                770
```

<210> 265

<211> 349

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 24, 60, 141, 226, 228, 249, 252

<223> unknown base

<400> 265

atttcaaggc cagccatatt tttntgttga accaacaaca ggagtcataa 50 gaatattttn taaaatggat agagaactgc aagatgagta ttgggtaatc 100 attcaagcca aggacatgat tggtcagcca ggagcgttgt ntggaacaac 150 aagtgtatta attaaacttt cagatgttaa tgacaataag cctatattta 200 aagaaagttt ataccgcttg actgtntntg aatctgcacc cactgggant 250 tntataggaa caatcatggc atatgataat gacataggag agaatgcaga 300 aatggattac agcattgaag aggatgattc gcaaacattt gacattatt 349

<210> 266

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

```
<223> Synthetic oligonucleotide probe
<400> 266
 cttgactgtc tctgaatctg caccc 25
<210> 267
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 267
 aagtggtgga agcctccagt gtgg 24
<210> 268
<211> 52
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 268
ccactacggt attagagcaa aagttaaaaa ccatcatggt tcctggagca 50
 qc 52
<210> 269
<211> 2747
<212> DNA
<213> Homo sapiens
<400> 269
gcaacctcag cttctagtat ccagactcca gcgccgcccc gggcgcggac 50
cccaaccccg acccagaget tetecagegg eggegeageg ageagggete 100
cccgccttaa cttcctccgc ggggcccagc caccttcggg agtccgggtt 150
gcccacctgc aaactctccg ccttctgcac ctgccacccc tgagccagcg 200
cgggcccccg agcgagtcat ggccaacgcg gggctgcagc tgttgggctt 250
cattetegee tteetgggat ggateggege categteage actgeeetge 300
cccagtggag gatttactcc tatgccggcg acaacatcgt gaccgcccag 350
gccatgtacg aggggctgtg gatgtcctgc gtgtcgcaga gcaccgggca 400
gatccagtgc aaagtctttg actccttgct gaatctgagc agcacattgc 450
aagcaacccg tgccttgatg gtggttggca tcctcctggg agtgatagca 500
atctttgtgg ccaccgttgg catgaagtgt atgaagtgct tggaagacga 550
tgaggtgcag aagatgagga tggctgtcat tgggggtgcg atatttcttc 600
```

ttgcaggtct ggctatttta gttgccacag catggtatgg caatagaatc 650 gttcaagaat tctatgaccc tatgacccca gtcaatgcca ggtacgaatt 700 tggtcaggct ctcttcactg gctgggctgc tgcttctctc tgccttctgg 750 gaggtgccct actttgctgt tcctgtcccc gaaaaacaac ctcttaccca 800 acaccaaggc cctatccaaa acctgcacct tccagcggga aagactacgt 850 gtgacacaga ggcaaaagga gaaaatcatg ttgaaacaaa ccgaaaatgg 900 acattgagat actatcatta acattaggac cttagaattt tgggtattgt 950 aatctgaagt atggtattac aaaacaaaca aacaaacaaa aaacccatgt 1000 gttaaaatac tcagtgctaa acatggctta atcttatttt atcttctttc 1050 ctcaatatag gagggaagat ttttccattt gtattactgc ttcccattga 1100 gtaatcatac tcaaatgggg gaaggggtgc tccttaaata tatatagata 1150 tgtatatata catgtttttc tattaaaaat agacagtaaa atactattct 1200 cattatgttg atactagcat acttaaaata tctctaaaat aggtaaatgt 1250 atttaattcc atattgatga agatgtttat tggtatattt tctttttcqt 1300 ccttatatac atatgtaaca gtcaaatatc atttactctt cttcattagc 1350 tttgggtgcc tttgccacaa gacctagcct aatttaccaa ggatgaattc 1400 tttcaattct tcatgcgtgc ccttttcata tacttatttt attttttacc 1450 ataatcttat agcacttgca tcgttattaa gcccttattt gttttgtgtt 1500 tcattggtct ctatctcctg aatctaacac atttcatagc ctacatttta 1550 gtttctaaag ccaagaagaa tttattacaa atcagaactt tqqaqqcaaa 1600 tctttctgca tgaccaaagt gataaattcc tgttgacctt cccacacaat 1650 ccctgtactc tgacccatag cactcttgtt tgctttgaaa atatttgtcc 1700 aattgagtag ctgcatgctg ttcccccagg tgttgtaaca caactttatt 1750 gattgaattt ttaagctact tattcatagt tttatatccc cctaaactac 1800 ctttttgttc cccattcctt aattgtattg ttttcccaag tgtaattatc 1850 atgcgtttta tatcttccta ataaggtgtg gtctgtttgt ctgaacaaag 1900 tgctagactt tctggagtga taatctggtg acaaatattc tctctgtagc 1950 tgtaagcaag tcacttaatc tttctacctc ttttttctat ctgccaaatt 2000 gagataatga tacttaacca gttagaagag gtagtgtgaa tattaattag 2050

tettatatac tettattett tgaacatgaa ctatgeetat gtagtgetet 2100 tatttgetea getggetgag acactgaaga agteactgaa caaaacctac 2150 acacgtacet teatgtgatt cactgeette eteteteae eagtetattt 2200 eeectgaaca aaacctacac acatacette atgtggtea gtgeetteet 2250 etetetacea gtetatttee actgaacaaa acctaegeae atacetteat 2300 gtggeteagt geetteetet etetaceagt etattteeat tetteaget 2350 gtgtetgaca tgtttgtget etgtteeatt ttaacaactg etettaettt 2400 teeagtetgt acagaatget atteacttg ageaagatga tgtaatggaa 2450 agggtgttgg cactggtgte tggagacetg gatttgagte ttggtgetat 2500 eaateacegt etgtgttga geaaggeatt tggetggetgt aagettattg 2550 etteatetgt aageggtggt ttgtaattee tgatetteee aceteacagt 2600 gatgttgtg ggatecagtg agatagaata catgtaagtg tggtttgta 2650 atttaaaaaag tgetatacta agggaaagaa ttgaggaatt aactgcatac 2700 gttttggtgt tgetttteaa atgtttgaaa ataaaaaaaa tgttaag 2747

<210> 270

<211> 211

<212> PRT

<213> Homo sapiens

<400> 270

Met Ala Asn Ala Gly Leu Gln Leu Leu Gly Phe Ile Leu Ala Phe 1 5 10 15

Leu Gly Trp Ile Gly Ala Ile Val Ser Thr Ala Leu Pro Gln Trp 20 25 30

Arg Ile Tyr Ser Tyr Ala Gly Asp Asn Ile Val Thr Ala Gln Ala 35 40 45

Met Tyr Glu Gly Leu Trp Met Ser Cys Val Ser Gln Ser Thr Gly 50 55 60

Gln Ile Gln Cys Lys Val Phe Asp Ser Leu Leu Asn Leu Ser Ser 65 70 75

Thr Leu Gln Ala Thr Arg Ala Leu Met Val Val Gly Ile Leu Leu 80 85 90

Gly Val Ile Ala Ile Phe Val Ala Thr Val Gly Met Lys Cys Met
95 100 105

Lys Cys Leu Glu Asp Asp Glu Val Gln Lys Met Arg Met Ala Val 110 115 120

```
Ile Gly Gly Ala Ile Phe Leu Leu Ala Gly Leu Ala Ile Leu Val
                 125
 Ala Thr Ala Trp Tyr Gly Asn Arg Ile Val Gln Glu Phe Tyr Asp
                                     145
 Pro Met Thr Pro Val Asn Ala Arg Tyr Glu Phe Gly Gln Ala Leu
                 155
                                     160
 Phe Thr Gly Trp Ala Ala Ser Leu Cys Leu Leu Gly Gly Ala
                 170
 Leu Leu Cys Cys Ser Cys Pro Arg Lys Thr Thr Ser Tyr Pro Thr
                 185
                                     190
 Pro Arg Pro Tyr Pro Lys Pro Ala Pro Ser Ser Gly Lys Asp Tyr
                 200
                                                          210
Val
<210> 271
<211> 564
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 21, 69, 163, 434, 436, 444
<223> unknown base
<400> 271
ttctggccaa acccggggct ncagctgttg ggcttcatct cgccttcctg 50
ggatggatcg gcgccatcnt cacactgccc ttccccagtg gaggatttta 100
ctccctatgc tggcgacaac atcgtgaccg cccagcccat gtacgagggg 150
ctgtggatgt ccngcgtgtc gcagagcacc gggcagatcc agtgcaaagt 200
ctttgactcc ttgctgaatc tgagcagcac attgcaagca acccgtgcct 250
tgatggtggt tggcatcctc ctgggagtga tagcaatctt tgtggccacc 300
gttggcatga agtgtatgaa gtgcttggaa gacgatgagg tgcagaagat 350
gaggatggct gtcattgggg gcgcgatatt tcttcttgca ggtctggcta 400
ttttagttgc cacagcatgg tatggcaata gaancnttca acanttctat 450
gaccctatga ccccagtcaa tgccaggtac gaatttggtc aggctctctt 500
cactggctgg gctgctgctt ctctctgcct tctgggaggt gccctacttt 550
gctgttcctg tccc 564
```

<210> 272 <211> 498

```
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 30, 49, 102, 141, 147, 171, 324-325, 339-341
<223> unknown base
<400> 272
 accettgace caacgeggee ceeegacegn tteatggeea aacgegggne 50
 tccagctgtt gggcttcatt ctccccttcc tgggatggac cggcgcccat 100
 cntcagcact gccctgcccc agtggaggat ttactcctat nccggcnaca 150
 acatcgtgac cgcccaggcc ntgtacgagg ggctgtggat gtcctgcqtq 200
 tcgcagagca ccgggcagat ccagtgcaaa gtctttgact cccttgctga 250
atctgagcag cacattgcaa gcaacccgtg ccttgatggt ggttggcatc 300
 ctcctgggag tgatagcaat cttnntggcc accgttgtnn ntgaagtgta 350
 tgaagtgctt ggaagacgat gaggtgcaga agatgaggat ggctgtcatt 400
gggggcgcga tatttcttct tgcaggtctg gctattttag ttgccacagc 450
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccga 498
<210> 273
<211> 552
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 25, 57, 67, 94-95, 116, 152, 165, 212, 233, 392-394
<223> unknown base
<400> 273
gggcccgacc attatccaac cgggntcact gttggctcat ctccctcctg 50
gatgaancgc gccatchtca gactccctgc cccatggaga tttnncctat 100
gctggcgaca acatentgac ceceagecat gtacgagggg ctttgaacgt 150
cngcgtgtcg cagancaccg ggcagatcca gtgcaaagtc tttgactcct 200
tgctgaatct gngcagcaca ttgcagcaac contgocctg atggtggttg 250
gcatcctcct gggagtgata gcaatctttg tggccaccgt tggcatgaag 300
tgtatgaagt gcttggaaga cgatgaggtg cagaagatga ggatggctgt 350
cattgggggc gcgatatttc ttcttgcagg tctggctatt tnnnqttqcc 400
```

acagcatggt atggcaatag aatcgttcaa gaattctatg accctatgac 450

```
cccagtcaat gccaggtacg aatttggtca ggctctcttc actggctggg 500
 ctgctgcttc tctctgcctt ctgggaggtg ccctactttg ctgttcctqc 550
 ga 552
<210> 274
<211> 526
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 25, 50, 60, 123, 127, 370, 395, 397-398, 402-403, 405-407
<223> unknown base
<400> 274
 attctcccct cctggatgga tcgcnccacc gtcacattgc cttcccccan 50
 tggaggattn actcctatgc tggcgacaac atcgtgaccc cccaggccat 100
 ttaccgaggg gctttggatg tcntgcntgt cgcagagcac cgggcagatc 150
 ccagtgcaaa gtctttgact ccttgctgaa tctgagcagc acattgcaag 200
 caacccgtgc cttgatgggg ttggcatcct cctgggagtg atagcaacct 250
 ttgtggccac cgttggcatg aagtgtatga agtgcttgga agacgatgag 300
 gtgccagaag atgaggatgg ctgtcattgg gggcgcgata tttcttgttg 350
 caggictggc tattitagin gccacagcat ggtatggcaa taganinnti 400
 cnngnnntct atgaccctat gaccccagtc aatgccaggt acgaatttgg 450
 tcaggctctc ttcactggct gggctgctgc ttctctctgc cttctgggag 500
 gtgccctact ttgctgttcc tgtccc 526
<210> 275
<211> 398
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 22, 61, 91, 144, 238-239, 262, 265-266, 271, 274
<223> unknown base
<400> 275
agagcaccgg cagatcccag tncaaagtct ttgacccttg ctgaatctga 50
gcagcacatt ncaagcaacc ccttgccttg aaggtggttg ncatccccc 100
tgggagtgaa tagcaatctt tgtggccacc gttggcatga agtntatgaa 150
gtgcttggaa gacgatgagg tgcagaagat gaggatggct gtcattgggg 200
```

gegegatatt tettettgea ggtetggeta ttttagtnne cacageatgg 250 tatggeaata gnatnntteg nggnttetat gaccetatga ceceagteaa 300 tgeeaggtae gaatttggte aggetetett cactggetgg getgetgett 350 etetetgeet tetgggaggt geeetacttt getgtteetg teecegaa 398

- <210> 276
- <211> 495
- <212> DNA
- <213> Homo sapiens
- <220>
- <221> unsure
- <222> 39, 58, 130, 234, 314, 364, 427, 450, 461, 476
- <223> unknown base
- <400> 276
- agcaatgccc tgccccagt ggaggattaa ttcctatgnt ggggacaaca 50 ttgtgacngc ccaggccatg tacgggggc tgtggatgtc ctgcgtgtcg 100
- cagagcaccg ggcagatcca gtgcaaagtn tttgactcct tgctgaattt 150
- gagcagcaca ttgcaagcaa cccgtgcctt gatggtggtt ggcatcttcc 200
- tgggagtgat agcaatcttt gtggccaccg tggnaatgaa gtgtatgaag 250
- tgcttggaag acgatgaggt gcagaagatg aggatggctg tcattggggg 300
- cgcgatattt cttnttgcag gtctggctat tttagttgcc acagcatggt 350
- atggcaatag aatngttcaa gaattttatg accctatgac cccagtcaat 400
- gccaggtacg aatttggtca ggctttnttc actggctggg ctgctgcttn 450
- tttctgcctt ntgggaggtg ccctantttg ctgttcctgc gaacc 495
- <210> 277
- <211> 200
- <212> DNA
- <213> Homo sapiens
- <220>
- <221> unsure
- <222> 34, 87, 138, 147, 163, 165-166, 172
- <223> unknown base
- <400> 277
- tcataggggg gcgcgatatt ttttcttgca ggtntggtta ttttagttgc 50 cacagcatgg tatggcaata gaatcgttca agaattntat gaccctatga 100 ccccagtcaa tgccaggtac gaatttggtc aggctctntt cactggntgg 150 gctgctgctt ctntnngcct tntgggaggt gccctacttt gctgttcctg 200

```
<210> 278
<211> 542
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 26, 43, 55, 77, 198, 361-362, 391-392, 396
<223> unknown base
<400> 278
ttcctgggat ggatccgccc ccatcntcac atgccctgcc ccntqqaqat 50
 ttacncctat gctggcgaac aacatcntga ccgcccaggc catgtacgag 100
 gggctgtgga atgtcctgcg tgtcccagag caccgggcag atccagtgca 150
 aagtetttga eteettgetg aatetgagea geacattgea ageaacentg 200
 ccttgatggt ggttggcatc ctcctgggag tgatagcaat ctttgtggcc 250
 accgttggca tgaaagtgta tgaagtgctt ggaagacgat gaggtgcaga 300
 agatgaggat ggctgtcatt gggggcgcga tatttcttct tgcaggtctg 350
 gctattttag nngccacagc atggtatggc aatcagaccc nntcanaaac 400
 tctatgaccc tatgacccca gtcaatgcca ggtacgaatt tggtcaggct 450
 ctcttcactg gctgggctgc tgcttctctc tgccttctgq gaggtgccct 500
actttgctgt tcctgtcccc gaaaaacaac ctcttaccca cg 542
<210> 279
<211> 548
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 90, 115, 147, 228, 387
<223> unknown base
<400> 279
cggggctgca gctgttgggc ttcatctcgc ttcctgggat ggaatcggcg 50
ccatcgtcag cactgccctg ccccatggag gatttactcn tatgctggcg 100
acaacatcgt gaccncccag gccatgtacg aggggctgtg gatgtcngcg 150
tgtcgcagag caccgggcag atccagtgca aagtctttga ctccttgctg 200
aatctgagca gcacattgca agcaaccntg ccttgatggt ggttggcatc 250
ctcctgggag tgatagcaat ctttgtggcc accgttggca tgaagtgtat 300
```

gaagtgcttg gaagacgatg aggtgcagaa gatgaggatg gctgtcattg 350

```
ggggcgcgat atttcttctt gcaggtctgg ctatttntag ttgccacagc 400
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccccag 450
 tcaatgccag gtacgaattt ggtcaggctc tcttcactgg ctgggctgct 500
gettetetet geettetggg aggtgeeeta etttgetgtt eetgegaa 548
<210> 280
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 280
cgagcgagtc atggccaacg c 21
<210> 281
<211> 26
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 281
gtgtcacacg tagtctttcc cgctgg 26
<210> 282
<211> 43
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
ctgcagctgt tgggcttcat tctcgccttc ctgggatgga tcg 43
<210> 283
<211> 2285
<212> DNA
<213> Homo sapiens
<400> 283
 gcgtgccgtc agctcgccgg gcaccgcggc ctcgccctcg ccctccgccc 50
 ctgcgcctgc accgcgtaga ccgaccccc cctccagcgc gcccacccgg 100
 tagaggaccc ccgcccgtgc cccgaccggt ccccgccttt ttgtaaaact 150
 taaagcgggc gcagcattaa cgcttcccgc cccggtgacc tctcaggggt 200
 ctccccgcca aaggtgctcc gccgctaagg aacatggcga aggtggagca 250
```

ggtcctgagc ctcgagccgc agcacgagct caaattccga ggtcccttca 300

ccgatgttgt caccaccaac ctaaagcttg gcaacccgac agaccgaaat 350 gtgtgtttta aggtgaagac tacagcacca cgtaggtact gtgtgaggcc 400 caacagcgga atcatcgatg caggggcctc aattaatgta tctgtgatgt 450 tacagccttt cgattatgat cccaatgaga aaagtaaaca caagtttatg 500 gttcagtcta tgtttgctcc aactgacact tcagatatgg aagcagtatg 550 gaaggaggca aaaccggaag accttatgga ttcaaaactt agatgtgtgt 600 ttgaattgcc agcagagaat gataaaccac atgatgtaga aataaataaa 650 attatatcca caactgcatc aaagacagaa acaccaatag tgtctaagtc 700 totgagttot totttggatg acaccgaagt taagaaggtt atggaagaat 750 gtaagaggct gcaaggtgaa gttcagaggc tacgggagga gaacaagcag 800 ttcaaggaag aagatggact gcggatgagg aagacagtgc agagcaacag 850 ccccatttca gcattagccc caactgggaa ggaagaaggc cttagcaccc 900 ggctcttggc tctggtggtt ttgttcttta tcgttggtgt aattattggg 950 aagattgcct tgtagaggta gcatgcacag gatggtaaat tggattggtg 1000 gatccaccat atcatgggat ttaaatttat cataaccatg tgtaaaaaga 1050 aattaatgta tgatgacatc tcacaggtct tgcctttaaa ttacccctcc 1100 ctgcacacac atacacagat acacacaca aaatataatg taacgatctt 1150 ttagaaagtt aaaaatgtat agtaactgat tgagggggaa aaagaatgat 1200 ctttattaat gacaagggaa accatgagta atgccacaat ggcatattgt 1250 aaatgtcatt ttaaacattg gtaggccttg gtacatgatg ctggattacc 1300 tctcttaaaa tgacaccctt cctcgcctgt tggtgctggc ccttggggag 1350 ctggagccca gcatgctggg gagtgcggtc agctccacac agtagtcccc 1400 acgtggccca ctcccggccc aggctgcttt ccgtgtcttc agttctgtcc 1450 aagccatcag ctccttggga ctgatgaaca gagtcagaag cccaaaggaa 1500 ttgcactgtg gcagcatcag acgtactcgt cataagtgag aggcgtgtgt 1550 tgactgattg acccagcgct ttggaaataa atggcagtgc tttgttcact 1600 taaagggacc aagctaaatt tgtattggtt catgtagtga agtcaaactg 1650 ttattcagag atgtttaatg catatttaac ttatttaatg tatttcatct 1700 catgttttct tattgtcaca agagtacagt taatgctgcg tgctgctgaa 1750

ctctgttggg tgaactggta ttgctgctgg agggctgtgg getectetgt 1800 ctctggagag tctggtcatg tggaggtggg gtttattggg atgctggaga 1850 agagctgcca ggaagtgttt tttctgggtc agtaaataac aactgtcata 1900 gggagggaaa ttctcagtag tgacagtcaa ctctaggtta cctttttaa 1950 tgaagagtag tcagtcttct agattgttct tataccacct ctcaaccatt 2000 actcacactt ccagcgccca ggtccaagtc tgagcctgac ctccccttgg 2050 ggacctagcc tggagtcagg acaaatggat cgggctgcag agggttagaa 2100 gcgagggcac cagcagttgt gggtgggag caagggaaga gagaaactct 2150 tcagcgaatc cttctagtac tagttgatga tttgactgtg aattaatttt 2200 atgccataaa agaccaaccc agttctgttt gactatgtag catcttgaaa 2250 agaaaaatta taataaagcc ccaaaattaa gaaaa 2285

<210> 284

<211> 243

<212> PRT

<213> Homo sapiens

<400> 284

Met Ala Lys Val Glu Gln Val Leu Ser Leu Glu Pro Gln His Glu
1 5 10 15

Leu Lys Phe Arg Gly Pro Phe Thr Asp Val Val Thr Thr Asn Leu 20 25 30

Lys Leu Gly Asn Pro Thr Asp Arg Asn Val Cys Phe Lys Val Lys
35 40 45

Thr Thr Ala Pro Arg Arg Tyr Cys Val Arg Pro Asn Ser Gly Ile
50 55 60

Ile Asp Ala Gly Ala Ser Ile Asn Val Ser Val Met Leu Gln Pro 65 70 75

Phe Asp Tyr Asp Pro Asn Glu Lys Ser Lys His Lys Phe Met Val 80 85 90

Gln Ser Met Phe Ala Pro Thr Asp Thr Ser Asp Met Glu Ala Val 95 100 105

Trp Lys Glu Ala Lys Pro Glu Asp Leu Met Asp Ser Lys Leu Arg 110 115 120

Cys Val Phe Glu Leu Pro Ala Glu Asn Asp Lys Pro His Asp Val 125 130 135

Glu Ile Asn Lys Ile Ile Ser Thr Thr Ala Ser Lys Thr Glu Thr 140 145 150

```
Pro Ile Val Ser Lys Ser Leu Ser Ser Ser Leu Asp Asp Thr Glu
                 155
Val Lys Lys Val Met Glu Glu Cys Lys Arg Leu Gln Gly Glu Val
                 170
Gln Arg Leu Arg Glu Glu Asn Lys Gln Phe Lys Glu Glu Asp Gly
                                     190
Leu Arg Met Arg Lys Thr Val Gln Ser Asn Ser Pro Ile Ser Ala
                                                          210
                 200
Leu Ala Pro Thr Gly Lys Glu Glu Gly Leu Ser Thr Arg Leu Leu
Ala Leu Val Val Leu Phe Phe Ile Val Gly Val Ile Ile Gly Lys
                                                          240
                 230
Ile Ala Leu
<210> 285
<211> 418
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 40, 53, 68, 119, 134, 177-178, 255
<223> unknown base
<400> 285
 gtcagtcttc tagattgtcc ttatcccacc tttcaaccan tactcacatt 50
 tenagegeee aggteeangt etgageetga etteeeettg gggaeetage 100
 ctggagtcag gacaatggnt cgggctgcag aggnttagaa gcgagggcac 150
 cagcagtttt gggtggggag caagggnnga gagaaactct tcagcgaatc 200
 cttctagtac tagttgagag tttgactgtg aattaatttt atgccataaa 250
 agacnaaccc agttctgttt gactatgtag catcttgaaa agaaaaatta 300
 taataaagcc ccaaaattaa gaattctttt gtcattttgt cacatttgct 350
 ctatgggggg aattattatt ttatcatttt tattattttg ccattggaag 400
 gttaacttta aaatgagc 418
<210> 286
<211> 543
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
```

195

<222> 73, 97

<223> unknown base

<400> 286
tattgtaaag gccattttaa accattggta ggccttggta catgatgctg 50
gattacctcc ttaaatgaca ccnttcctcg cctgttggtg ctggccnttg 100
gggagctgga gccccagcat gctggggagt gcggtcagct ccacacagta 150
gtcccacgt ggcccactcc cggcccaggc tgctttccgt gtcttcagtt 200
ctgtccaagc catcagctcc ttgggactga tgaacagagt cagaagccca 250
aaggaattgc cactgtggca gcatcagacg tactcgtcat aagtgagagg 300
cgtgtgttga ctgattgacc cagcgctttg gaaataaatg gcagtgcttt 350
gtcacttaa agggaccaag ctaaattgta ttggttcatg tagtgaagtc 400
aaactgttat tcagagatgt ttaatgcata tttaacttat ttaatgtatt 450
tcatctcatg ttttcttatt gtcacaagag tacagttaat gctgcgtgct 500
gctgaactct gttgggtgaa ctggtattgc tgctggaggg ctg 543

```
<210> 287
<211> 270
<212> DNA
```

<213> Homo sapiens

<220>

<221> unsure

<222> 38, 64, 72, 164, 198, 200, 220, 222, 229, 242

<223> unknown base

<400> 287

ccctggtggt tttgttcttt aattcgttgg tgtaattntt gggaagattg 50 cttgtagagg tagnatgcac cnggctggta aattggattg gtggatccac 100 catatccatg ggatttaaat ttatcataac catgtgtaaa aagaaattaa 150 tgtatgatga catntcacag gtattgcctt taaattaccc atccctgnan 200 acacatacac agatacacan anacaaatnt aatgtaacga tnttttagaa 250 agttaaaaat gtatagtaac 270

<210> 288 <211> 428

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 35, 116, 129, 197, 278, 294, 297, 349, 351

<223> unknown base

```
<400> 288
ggtggcccat tcccggccca ggctgctttc cggtnttcag ttctgtccaa 50
gccatcagct ccttgggact gatgaacaga gtcagaagcc caaaggaatt 100
gcactgtggc agcatnagac gtacttgtna taagtgagag gcgtgtgttg 150
actgattgac ccagcgcttt ggaaataaat ggcagtgctt tgttcantta 200
aagggaccaa gctaaatttg tattggttca tgtagtgaag tcaaactgtt 250
 attcagagat gtttaatgca tatttaantt atttaatgta tttnatntca 300
 tgttttctta ttgtcacaag agtacagtta atgctgcgtg ctgctgaant 350
 ntgttgggtg aactggtatt gctgctggag ggctgtgggc tcctctgtct 400
 ttggagagtc tggtcatgtg gaggtggg 428
<210> 289
<211> 320
<212> DNA
<213> Homo sapiens
<400> 289
 tgctttccgt gtcttcagtt ctgtccaagc catcagctcc ttgggacttg 50
 atgaacagag tcagaagccc aaaggaattg cactgtggca gcatcagacg 100
 tactcgtcat aagtgagagg cgtgtgttga ctgattgacc cagcgctttg 150
 qaaataaatq qcaqtqcttt qttcacttaa agggaccaag ctaaatttgt 200
 attggttcat gtagtgaagt caaactgtta ttcagagatg tttaatgcat 250
 atttaactta tttaatgtat ttcatctcat gttttcttat tgtcacaaga 300
 gtacagttaa tgctgcgtgc 320
<210> 290
<211> 609
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 57, 60, 186, 235, 244, 304, 339, 355, 359, 361, 387, 432, 441,
      447, 481, 513, 532, 584, 598
<223> unknown base
<400> 290
 aaacctttaa aagttgaggg gaaaagaatg atcctttatt aatgacaagg 50
 gaaaccntgn gtaatgccac aatggcatat tgtaaatgtc attttaaaca 100
 ttggtaggcc ttggtacatg atgctggatt acctctctta aaatgacacc 150
```

cttcctcgcc tgttggtgct ggcccttggg gagctngagc ccagcatgct 200

ggggagtgcg gtctgctcca cacagtagtc cccangtggc ccantcccgg 250 cccaggctgc tttccgtgtc ttcagttctg tccaagccat cagctccttg 300 ggantgatga acagagtcag aagcccaaag gaattgcant gtggcagcat 350 cagangtant ngtcataagt gagaggcgtg tgttgantga ttgacccagc 400 gctttggaaa taaatggcag tgctttgttc anttaaaggg nccaagntaa 450 atttgtattg gttcatgtag tgaagtcaaa ntgttattca gagatgttta 500 atgcatattt aanttatta atgtattca tntcatgttt tcttattgtc 550 acaagggtac agttaatgct gcgtgctgct gaantctgtt gggtgaantg 600 gtattgctg 609

<210> 291 <211> 493

<212> DNA

<213> Homo sapiens

<400> 291
ggcccttggg gagctggagc ccagcatgct ggggagtgcg gtcagctcca 50
cacagtagtc cccacgtggc ccactcccgg cccaggctgc tttccgtgtc 100
ttcagttctg tccaagccat cagctccttg ggactgatga acagagtcag 150
aagcccaaag gaattgcact gtggcagcat cagacgtact cgtcataagt 200
gagaggcgtg tgttgactga ttgacccagc gctttggaaa taaatggcag 250
tgctttgttc acttaaaggg accaagctaa atttgtattg gttcatgtag 300
tgaagtcaaa ctgttattca gagatgtta atgcatatt aacttatta 350
atgtattca tctcatgtt tcttattgtc acaagagtac agttaatgct 400
gcgtgctgct gaactctgtt gggtgaactg gtattgctgc tggagggctg 450
tgggctcctc tqtctctgga gagtctggtc atgtggaggt ggg 493

<210> 292

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 292

gcaccaccgt aggtacttgt gtgaggc 27

<210> 293

<211> 23

<212> DNA

<213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 293 aaccaccaga gccaagagcc ggg 23 <210> 294 <211> 50 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 294 cagcggaatc atcgatgcag gggcctcaat taatgtatct gtgatgttac 50 <210> 295 <211> 2530 <212> DNA <213> Homo sapiens <400> 295 gcgagctccg ggtgctgtgg cccggccttg gcggggcggc ctccggctca 50 ggctggctga gaggctccca gctgcagcgt ccccgcccgc ctcctcggga 100 gctctgatct cagctgacag tgccctcggg gaccaaacaa gcctggcagg 150 gtctcacttt gttgcccagg ctggagttca gtgccatgat catggtttac 200 tgcagccttg acctcctggg ttcaagcgat cctgctgagt agctgggact 250 acaggacaaa attagaagat caaaatggaa aatatgctgc tttggttgat 300 atttttcacc cctgggtgga ccctcattga tggatctgaa atggaatggg 350 attttatgtg gcacttgaga aaggtacccc ggattgtcag tgaaaggact 400 ttccatctca ccagccccgc atttgaggca gatgctaaga tgatggtaaa 450 tacagtgtgt ggcatcgaat gccagaaaga actcccaact cccagccttt 500 ctgaattgga ggattatctt tcctatgaga ctgtctttga gaatggcacc 550 cgaaccttaa ccagggtgaa agttcaagat ttggttcttg agccgactca 600 aaatatcacc acaaagggag tatctgttag gagaaagaga caggtgtatg 650 gcaccgacag caggttcagc atcttggaca aaaggttctt aaccaatttc 700 cctttcagca cagctgtgaa gctttccacg ggctgtagtg gcattctcat 750 ttcccctcag catgttctaa ctgctgccca ctgtgttcat gatggaaagg 800 actatgtcaa agggagtaaa aagctaaggg tagggttgtt gaagatgagg 850

aataaaagtg gaggcaagaa acgtcgaggt tctaagagga gcaggagaga 900 agctagtggt ggtgaccaaa gagagggtac cagagagcat ctgcaggaga 950 gagcgaaggg tgggagaaga agaaaaaaat ctggccgggg tcagaggatt 1000 gccgaaggga ggccttcctt tcagtggacc cgggtcaaga atacccacat 1050 tccgaagggc tgggcacgag gaggcatggg ggacgctacc ttggactatg 1100 actatgctct tctggagctg aagcgtgctc acaaaaagaa atacatggaa 1150 cttggaatca gcccaacgat caagaaaatg cctggtggaa tgatccactt 1200 ctcaggattt gataacgata gggctgatca gttggtctat cggttttgca 1250 gtgtgtccga cgaatccaat gatctccttt accaatactg cgatgctgag 1300 tcqqqctcca ccqqttcqqq qqtctatctq cqtctqaaaq atccagacaa 1350 aaagaattgg aagcgcaaaa tcattgcggt ctactcaggg caccagtggg 1400 tggatgtcca cggggttcag aaggactaca acgttgctgt tcgcatcact 1450 cccctaaaat acgcccagat ttgcctctgg attcacggga acgatgccaa 1500 ttgtgcttac ggctaacaga gacctgaaac agggcggtgt atcatctaaa 1550 tcacagagaa aaccagctct gcttaccgta gtgagatcac ttcataggtt 1600 atgcctggac ttgaactctg tcaatagcat ttcaacattt ttcaaaatca 1650 ggagattttc gtccatttaa aaaatgtata ggtgcagata ttgaaactag 1700 gtgggcactt caatgccaag tatatactct tctttacatg gtgatgagtt 1750 tcatttgtag aaaaattttg ttgccttctt aaaaattaga cacactttaa 1800 accttcaaac aggtattata aataacatgt gactccttaa tggacttatt 1850 ctcagggtcc tactctaaga agaatctaat aggatgctgg ttgtgtatta 1900 aatgtgaaat tgcatagata aaggtagatg gtaaagcaat tagtatcaga 1950 atagagacag aaagttacaa cacagtttgt actactctga gatggatcca 2000 ttcaqctcat qccctcaatg tttatattgt gttatctgtt gggtctggga 2050 catttagttt agtttttttg aagaattaca aatcagaaga aaaagcaagc 2100 attataaaca aaactaataa ctgttttact gctttaagaa ataacaatta 2150 caatgtgtat tatttaaaaa tgggagaaat agtttgttct atgaaataaa 2200 cctagtttag aaatagggaa gctgagacat tttaagatct caagttttta 2250 tttaactaat actcaaaata tggacttttc atgtatgcat agggaagaca 2300 cttcacaaat tatgaatgat catgtgttga aagccacatt attttatgct 2350 atacattcta tgtatgaggt gctacatttt taggacaaag aattctgtaa 2400 tctttttcaa gaaagagtct ttttctcctt gacaaaatcc agcttttgta 2450 tgaggactat agggtgaatt ctctgattag taattttaga tatgtccttt 2500 cctaaaaatg aataaaattt atgaatatga 2530

<210> 296

<211> 413

<212> PRT

<213> Homo sapiens

<400> 296

Met Glu Asn Met Leu Leu Trp Leu Ile Phe Phe Thr Pro Gly Trp 1 5 10 15

Thr Leu Ile Asp Gly Ser Glu Met Glu Trp Asp Phe Met Trp His 20 25 30

Leu Arg Lys Val Pro Arg Ile Val Ser Glu Arg Thr Phe His Leu 35 40 45

Thr Ser Pro Ala Phe Glu Ala Asp Ala Lys Met Met Val Asn Thr
50 55 60

Val Cys Gly Ile Glu Cys Gln Lys Glu Leu Pro Thr Pro Ser Leu 65 70 75

Ser Glu Leu Glu Asp Tyr Leu Ser Tyr Glu Thr Val Phe Glu Asn 80 85 90

Gly Thr Arg Thr Leu Thr Arg Val Lys Val Gln Asp Leu Val Leu 95 100 105

Glu Pro Thr Gln Asn Ile Thr Thr Lys Gly Val Ser Val Arg Arg
110 115 120

Lys Arg Gln Val Tyr Gly Thr Asp Ser Arg Phe Ser Ile Leu Asp 125 130 135

Lys Arg Phe Leu Thr Asn Phe Pro Phe Ser Thr Ala Val Lys Leu 140 145 150

Ser Thr Gly Cys Ser Gly Ile Leu Ile Ser Pro Gln His Val Leu 155 160 165

Thr Ala Ala His Cys Val His Asp Gly Lys Asp Tyr Val Lys Gly 170 175 180

Ser Lys Lys Leu Arg Val Gly Leu Leu Lys Met Arg Asn Lys Ser 185 190 195

Gly Gly Lys Lys Arg Arg Gly Ser Lys Arg Ser Arg Arg Glu Ala 200 205 210

```
Ser Gly Gly Asp Gln Arg Glu Gly Thr Arg Glu His Leu Gln Glu
Arg Ala Lys Gly Gly Arg Arg Lys Lys Ser Gly Arg Gly Gln
Arg Ile Ala Glu Gly Arg Pro Ser Phe Gln Trp Thr Arg Val Lys
Asn Thr His Ile Pro Lys Gly Trp Ala Arg Gly Gly Met Gly Asp
Ala Thr Leu Asp Tyr Asp Tyr Ala Leu Leu Glu Leu Lys Arg Ala
His Lys Lys Lys Tyr Met Glu Leu Gly Ile Ser Pro Thr Ile Lys
Lys Met Pro Gly Gly Met Ile His Phe Ser Gly Phe Asp Asn Asp
Arg Ala Asp Gln Leu Val Tyr Arg Phe Cys Ser Val Ser Asp Glu
Ser Asn Asp Leu Leu Tyr Gln Tyr Cys Asp Ala Glu Ser Gly Ser
Thr Gly Ser Gly Val Tyr Leu Arg Leu Lys Asp Pro Asp Lys Lys
                350
Asn Trp Lys Arg Lys Ile Ile Ala Val Tyr Ser Gly His Gln Trp
Val Asp Val His Gly Val Gln Lys Asp Tyr Asn Val Ala Val Arg
Ile Thr Pro Leu Lys Tyr Ala Gln Ile Cys Leu Trp Ile His Gly
Asn Asp Ala Asn Cys Ala Tyr Gly
```

<210> 297

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 297

gcatctgcag gagagagcga aggg 24

<210> 298

<211> 24

<212> DNA

<213> Artificial Sequence

```
<220>
<223> Synthetic oligonucleotide probe
<400> 298
 catcgttccc gtgaatccag aggc 24
<210> 299
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 299
 gaagggaggc cttcctttca gtggacccgg gtcaagaata cccac 45
<210> 300
<211> 1869
<212> DNA
<213> Homo sapiens
<400> 300
 aatgtgagag gggctgatgg aagctgatag gcaggactgg agtgttagca 50
 ccagtactgg atgtgacagc aggcagagga gcacttagca gcttattcag 100
 tgtccgattc tgattccggc aaggatccaa gcatggaatg ctgccgtcgg 150
 gcaactcctg gcacactgct cctctttctg gctttcctgc tcctgagttc 200
 caggaccgca cgctccgagg aggaccggga cggcctatgg gatgcctggg 250
 gcccatggag tgaatgctca cgcacctgcg ggggaggggc ctcctactct 300
 ctgaggcgct gcctgagcag caagagctgt gaaggaagaa atatccgata 350
 cagaacatgc agtaatgtgg actgcccacc agaagcaggt gatttccgag 400
 ctcagcaatg ctcagctcat aatgatgtca agcaccatgg ccagttttat 450
 gaatggcttc ctgtgtctaa tgaccctgac aacccatgtt cactcaagtg 500
 ccaagccaaa ggaacaaccc tggttgttga actagcacct aaggtcttag 550
 atggtacgcg ttgctataca gaatctttgg atatgtgcat cagtggttta 600
 tgccaaattg ttggctgcga tcaccagctg ggaagcaccg tcaaggaaga 650
 taactgtggg gtctgcaacg gagatgggtc cacctgccgg ctggtccgag 700
ggcagtataa atcccagctc tccgcaacca aatcggatga tactgtggtt 750
gcacttccct atggaagtag acatattcgc cttgtcttaa aaggtcctga 800
tcacttatat ctggaaacca aaaccctcca ggggactaaa ggtgaaaaca 850
gtctcagctc cacaggaact ttccttgtgg acaattctag tgtggacttc 900
```

cagaaatttc cagacaaaga gatactgaga atggctggac cactcacagc 950 agatttcatt gtcaagattc gtaactcggg ctccgctgac agtacagtcc 1000 agttcatctt ctatcaaccc atcatccacc gatggaggga gacggatttc 1050 tttccttgct cagcaacctg tggaggaggt tatcagctga catcqqctqa 1100 gtgctacgat ctgaggagca accgtgtggt tgctgaccaa tactgtcact 1150 attacccaga gaacatcaaa cccaaaccca agcttcagga gtgcaacttg 1200 gatccttgtc cagccagtga cggatacaag cagatcatgc cttatgacct 1250 ctaccatccc cttcctcggt gggaggccac cccatggacc gcgtgctcct 1300 cctcgtgtgg ggggggcatc cagagccggg cagtttcctg tgtggaggag 1350 gacatccagg ggcatgtcac ttcagtggaa gagtggaaat gcatgtacac 1400 ccctaagatg cccatcgcgc agccctgcaa catttttgac tgccctaaat 1450 ggctggcaca ggagtggtct ccgtgcacag tgacatgtgg ccaqqqcctc 1500 agataccgtg tggtcctctg catcgaccat cgaggaatgc acacaggagg 1550 ctgtagccca aaaacaaagc cccacataaa agaggaatgc atcgtaccca 1600 ctccctgcta taaacccaaa gagaaacttc cagtcgaggc caagttgcca 1650 tggttcaaac aagctcaaga gctagaagaa ggagctgctg tgtcagagga 1700 gccctcgtaa gttgtaaaag cacagactgt tctatatttg aaactgtttt 1750 gtttaaagaa agcagtgtct cactggttgt agctttcatg ggttctgaac 1800 taagtgtaat catctcacca aagctttttg gctctcaaat taaagattga 1850 ttagtttcaa aaaaaaaaa 1869

<210> 301

<211> 525

<212> PRT

<213> Homo sapiens

<400> 301

Met Glu Cys Cys Arg Arg Ala Thr Pro Gly Thr Leu Leu Leu Phe 1 5 10 15

Leu Ala Phe Leu Leu Ser Ser Arg Thr Ala Arg Ser Glu Glu
20 25 30

Asp Arg Asp Gly Leu Trp Asp Ala Trp Gly Pro Trp Ser Glu Cys
35
40
45

Ser Arg Thr Cys Gly Gly Gly Ala Ser Tyr Ser Leu Arg Arg Cys 50 55 60

Leu	Ser	Ser	Lys	Ser 65	Суз	Glu	Gly	Arg	Asn 70	Ile	Arg	Tyr	Arg	Thr 75
Cys	Ser	Asn	Val	Asp 80	Суз	Pro	Pro	Glu	Ala 85	Gly	Asp	Phe	Arg	Ala 90
Gln	Gln	Cys	Ser	Ala 95	His	Asn	Asp	Val	Lys 100	His	His	Gly	Gln	Phe 105
Tyr	Glu	Trp	Leu	Pro 110	Val	Ser	Asn	Asp	Pro 115	Asp	Asn	Pro	Cys	Ser 120
Leu	Lys	Cys	Gln	Ala 125	Lys	Gly	Thr	Thr	Leu 130	Val	Val	Glu	Leu	Ala 135
Pro	Lys	Val	Leu	Asp 140	Gly	Thr	Arg	Cys	Tyr 145	Thr	Glu	Ser	Leu	Asp 150
Met	Cys	Ile	Ser	Gly 155	Leu	Cys	Gln	Ile	Val 160	Gly	Cys	Asp	His	Gln 165
Leu	Gly	Ser	Thr	Val 170	Lys	Glu	Asp	Asn	Cys 175	Gly	Val	Суз	Asn	Gly 180
Asp	Gly	Ser	Thr	Cys 185	Arg	Leu	Val	Arg	Gly 190	Gln	Tyr	Lys	Ser	Gln 195
Leu	Ser	Ala	Thr	Lys 200	Ser	Asp	Asp	Thr	Val 205	Val	Ala	Leu	Pro	Tyr 210
Gly	Ser	Arg	His	Ile 215	Arg	Leu	Val	Leu	Lys 220	Gly	Pro	Asp	His	Leu 225
Tyr	Leu	Glu	Thr	Lys 230	Thr	Leu	Gln	Gly	Thr 235	Lys	Gly	Glu	Asn	Ser 240
Leu	Ser	Ser	Thr	Gly 245	Thr	Phe	Leu	Val	Asp 250	Asn	Ser	Ser	Val	Asp 255
Phe	Gln	Lys	Phe	Pro 260	Asp	Lys	Glu	Ile	Leu 265	Arg	Met	Ala	Gly	Pro 270
Leu	Thr	Ala	Asp	Phe 275	Ile	Val	Lys	Ile	Arg 280	Asn	Ser	Gly	Ser	Ala 285
Asp	Ser	Thr	Val	Gln 290	Phe	Ile	Phe	Tyr	Gln 295	Pro	Ile	Ile	His	Arg 300
Trp	Arg	Glu	Thr	Asp 305	Phe	Phe	Pro	Cys	Ser 310	Ala	Thr	Cys	Gly	Gly 315
Gly	Tyr	Gln	Leu	Thr 320	Ser	Ala	Glu	Cys	Tyr 325	Asp	Leu	Arg	Ser	Asn 330
Arg	Väl	Val	Ala	Asp 335	Gln	Tyr	Cys	His	Tyr 340	Tyr	Pro	Glu	Asn	Ile 345
Lys	Pro	Lys	Pro	Lys	Leu	Gln	Glu	Cys	Asn	Leu	Asp	Pro	Cys	Pro

				350					355					360
Ala	Ser	Asp	Gly	Tyr 365	Lys	Gln	Ile	Met	Pro 370	Tyr	Asp	Leu	Tyr	His 375
Pro	Leu	Pro	Arg	Trp 380	Glu	Ala	Thr	Pro	Trp 385	Thr	Ala	Суз	Ser	Ser 390
Ser	Суѕ	Gly	Gly	Gly 395	Ile	Gln	Ser	Arg	Ala 400	Val	Ser	Cys	Val	Glu 405
Glu	Asp	Ile	Gln	Gly 410	His	Val	Thr	Ser	Val 415	Glu	Glu	Trp	Lys	Cys 420
Met	Tyr	Thr	Pro	Lys 425	Met	Pro	Ile	Ala	Gln 430	Pro	Cys	Asn	Ile	Phe 435
Asp	Суз	Pro	Lys	Trp 440	Leu	Ala	Gln	Glu	Trp 445	Ser	Pro	Cys	Thr	Val 450
Thr	Суз	Gly	Gln	Gly 455	Leu	Arg	Tyr	Arg	Val 460	Val	Leu	Cys	Ile	Asp 465
His	Arg	Gly	Met	His 470	Thr	Gly	Gly	Cys	Ser 475	Pro	Lys	Thr	Lys	Pro 480
His	Ile	Lys	Glu	Glu 485	Cys	Ile	Val	Pro	Thr 490	Pro	Cys	Tyr	Lys	Pro 495
Lys	Glu	Lys	Leu	Pro 500	Val	Glu	Ala	Lys	Leu 505	Pro	Trp	Phe	Lys	Gln 510
Ala	Gln	Glu	Leu	Glu 515	Glu	Gly	Ala	Ala	Val 520	Ser	Glu	Glu	Pro	Ser 525
<210	> 302	2												

<211> 1533

<212> DNA

<213> Homo sapiens

<400> 302

cggacgcgtg ggcggcggct gcggaactcc cgtggagggg ccggtgggcc 50 ctcgggcctg acagatggca gtggccactg cggcggcagt actggccgct 100 ctgggcgggg cgctgtggct ggcggcccgc cggttcgtgg ggcccagggt 150 ccagcggctg cgcagaggcg gggaccccgg cctcatgcac gggaagactg 200 tgctgatcac cggggcgaac agcggcctgg gccgcgccac ggccgccgag 250 ctactgcgcc tgggagcgcg ggtgatcatg ggctgccggg accgcgcgcg 300 cgccgaggag gcggcgggtc agctccgccg cgagctccgc caggccgcgg 350 agtgcggccc agagcctggc gtcagcgggg tgggcgagct catagtccgg 400 gagetggace tegeeteget gegeteggtg egegeettet geeaggaaat 450

gctccaggaa gagcctaggc tggatgtctt gatcaataac gcagggatct 500 tccagtgccc ttacatgaag actgaagatg ggtttgagat gcagttcgga 550 gtgaaccatc tggggcactt tctactcacc aatcttctcc ttggactcct 600 caaaagttca gctcccagca ggattgtggt agtttcttcc aaactttata 650 aatacggaga catcaatttt gatgacttga acagtgaaca aagctataat 700 aaaagctttt gttatagccg gagcaaactg gctaacattc tttttaccag 750 ggaactagcc cgccgcttag aaggcacaaa tgtcaccgtc aatgtgttgc 800 atcctggtat tgtacqqaca aatctqqqqa qqcacataca cattccactq 850 ttggtcaaac cactcttcaa tttggtgtca tgggcttttt tcaaaactcc 900 agtagaaggt gcccagactt ccatttattt ggcctcttca cctgaggtag 950 aaggagtgtc aggaagatac tttggggatt gtaaagagga agaactgttg 1000 cccaaagcta tggatgaatc tgttgcaaga aaactctggg atatcagtga 1050 agtgatggtt ggcctgctaa aataggaaca aggagtaaaa gagctgttta 1100 taaaactgca tatcagttat atctgtgatc aggaatggtg tggattgaga 1150 acttgttact tgaagaaaaa gaattttgat attggaatag cctgctaaga 1200 ggtacatgtg ggtattttgg aqttactgaa aaattatttt tggqataaga 1250 gaatttcagc aaagatgttt taaatatata tagtaagtat aatgaataat 1300 aagtacaatg aaaaatacaa ttatattgta aaattataac tgggcaagca 1350 tggatgacat attaatattt gtcagaatta agtgactcaa agtgctatcg 1400 agaggttttt caagtatctt tgagtttcat ggccaaagtg ttaactagtt 1450 ttactacaat gtttggtgtt tgtgtggaaa ttatctgcct ggtgtgtgca 1500

<210> 303

<211> 336

<212> PRT

<213> Homo sapiens

<400> 303

Met Ala Val Ala Thr Ala Ala Ala Val Leu Ala Ala Leu Gly Gly 1 5 10 15

cacaagtett acttggaata aatttactgg tac 1533

Ala Leu Trp Leu Ala Ala Arg Arg Phe Val Gly Pro Arg Val Gln 20 25 30

Arg Leu Arg Arg Gly Gly Asp Pro Gly Leu Met His Gly Lys Thr 35 40 45

Val Leu Ile Thr Gly Ala Asn Ser Gly Leu Gly Arg Ala Thr Ala Ala Glu Leu Leu Arg Leu Gly Ala Arg Val Ile Met Gly Cys Arg Asp Arg Ala Arg Ala Glu Glu Ala Ala Gly Gln Leu Arg Arg Glu Leu Arg Gln Ala Ala Glu Cys Gly Pro Glu Pro Gly Val Ser Gly Val Gly Glu Leu Ile Val Arg Glu Leu Asp Leu Ala Ser Leu Arg 110 115 Ser Val Arg Ala Phe Cys Gln Glu Met Leu Gln Glu Glu Pro Arg 130 Leu Asp Val Leu Ile Asn Asn Ala Gly Ile Phe Gln Cys Pro Tyr Met Lys Thr Glu Asp Gly Phe Glu Met Gln Phe Gly Val Asn His Leu Gly His Phe Leu Leu Thr Asn Leu Leu Gly Leu Leu Lys Ser Ser Ala Pro Ser Arg Ile Val Val Ser Ser Lys Leu Tyr Lys Tyr Gly Asp Ile Asn Phe Asp Asp Leu Asn Ser Glu Gln Ser Tyr Asn Lys Ser Phe Cys Tyr Ser Arg Ser Lys Leu Ala Asn Ile Leu Phe Thr Arg Glu Leu Ala Arg Arg Leu Glu Gly Thr Asn Val Thr Val Asn Val Leu His Pro Gly Ile Val Arg Thr Asn Leu Gly Arg His Ile His Ile Pro Leu Leu Val Lys Pro Leu Phe Asn Leu Val Ser Trp Ala Phe Phe Lys Thr Pro Val Glu Gly Ala Gln Thr Ser Ile Tyr Leu Ala Ser Ser Pro Glu Val Glu Gly Val Ser Gly Arg Tyr Phe Gly Asp Cys Lys Glu Glu Glu Leu Leu Pro Lys Ala Met Asp Glu Ser Val Ala Arg Lys Leu Trp Asp Ile Ser Glu Val 330 Met Val Gly Leu Leu Lys

```
<210> 304
<211> 521
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 20, 34, 62, 87, 221, 229
<223> unknown base
<400> 304
 ggggattgta aagaggaagn actgtgccca aagntatgga tgaatctgtt 50
 gcaagaaaat tntgggatat cagtgaagtg atggttngcc tgctaaaata 100
 ggaacaagga gtaaaagagc tgtttataaa actgcatatc agttatatct 150
 gtgatcagga atggtgtgga ttgagaactt qttacttgaa qaaaaagaat 200
 tttgatattg gaatagcctg ntaagaggna catgtgggta ttttggagtt 250
 actgaaaaat tatttttggg ataagagaat ttcagcaaag atgttttaaa 300
 tatatatagt aagtataatg aataataagt acaatgaaaa atacaattat 350
 attgtaaaat tataactggg caagcatgga tgacatatta atatttgtca 400
 gaattaagtg actcaaagtg ctatcgagag gtttttcaag tatctttgag 450
 tttcatggcc aaagtgttaa ctagttttac tacaatgttt ggtgtttgtg 500
 tggaaattat ctgcctggct t 521
<210> 305
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 305
ccaggaaatg ctccaggaag agcc 24
<210> 306
<211> 26
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 306
gcccatgaca ccaaattgaa gagtgg 26
<210> 307
```

```
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 307
 aacgcaggga tcttccagtg cccttacatg aagactgaag atggg 45
<210> 308
<211> 1523
<212> DNA
<213> Homo sapiens
<400> 308
 gagaggacga ggtgccgctg cctggagaat cctccgctqc cqtcqqctcc 50
 cggagcccag ccctttccta acccaaccca acctagccca gtcccagccg 100
 ccagcgcctg tccctgtcac ggaccccagc gttaccatgc atcctgccgt 150
 cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 200
 gggtttttac tcctgtaaca actgaaataa caagtcttgc tacagagaat 250
 atagatgaaa ttttaaacaa tgctgatgtt gctttagtaa atttttatqc 300
 tgactggtgt cgtttcagtc agatgttgca tccaattttt gaggaagctt 350
 ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 400
 agagttgatt gtgatcagca ctctgacata gcccagagat acaggataag 450
 caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500
 aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggcaa 550
 caaaaaagtg accccattca agaaattcgg gacttagcag aaatcaccac 600
 tcttgatcgc agcaaaagaa atatcattgg atattttgag caaaaggact 650
 cggacaacta tagagttttt gaacgagtag cgaatatttt gcatgatgac 700
tgtgcctttc tttctgcatt tggggatgtt tcaaaaccgg aaagatatag 750
tggcgacaac ataatctaca aaccaccagg gcattctgct ccggatatgg 800
tgtacttggg agctatgaca aattttgatg tgacttacaa ttggattcaa 850
gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900
attgacagaa gaaggactgc cttttctcat actctttcac atgaaagaag 950
atacagaaag tttagaaata ttccagaatg aagtagctcq qcaattaata 1000
```

agtgaaaaag gtacaataaa ctttttacat gccgattgtg acaaatttag 1050

- <210> 309
- <211> 406
- <212> PRT
- <213> Homo sapiens
- <400> 309
- Met His Pro Ala Val Phe Leu Ser Leu Pro Asp Leu Arg Cys Ser 1 5 10 15
- Leu Leu Leu Val Thr Trp Val Phe Thr Pro Val Thr Thr Glu
 20 25 30
- Ile Thr Ser Leu Ala Thr Glu Asn Ile Asp Glu Ile Leu Asn Asn 35 40 45
- Ala Asp Val Ala Leu Val Asn Phe Tyr Ala Asp Trp Cys Arg Phe 50 55 60
- Ser Gln Met Leu His Pro Ile Phe Glu Glu Ala Ser Asp Val Ile 65 70 75
- Lys Glu Glu Phe Pro Asn Glu Asn Gln Val Val Phe Ala Arg Val 80 85 90
- Asp Cys Asp Gln His Ser Asp Ile Ala Gln Arg Tyr Arg Ile Ser 95 100 105
- Lys Tyr Pro Thr Leu Lys Leu Phe Arg Asn Gly Met Met Lys 110 115 120
- Arg Glu Tyr Arg Gly Gln Arg Ser Val Lys Ala Leu Ala Asp Tyr 125 130 135
- Ile Arg Gln Gln Lys Ser Asp Pro Ile Gln Glu Ile Arg Asp Leu
 140 145 150
- Ala Glu Ile Thr Thr Leu Asp Arg Ser Lys Arg Asn Ile Ile Gly
 155 160 165

TYL IME	Glu	Gln	Lys 170	Asp	Ser	Asp	Asn	Tyr 175	Arg	Val	Phe	Glu	Arg 180
Val Ala	Asn	Ile	Leu 185	His	Asp	Asp	Cys	Ala 190	Phe	Leu	Ser	Ala	Phe 195
Gly Asp	Val	Ser	Lys 200	Pro	Glu	Arg	Tyr	Ser 205	Gly	Asp	Asn	Ile	Ile 210
Tyr Lys	Pro	Pro	Gly 215	His	Ser	Ala	Pro	Asp 220	Met	Val	Tyr	Leu	Gly 225
Ala Met	Thr	Asn	Phe 230	Asp	Val	Thr	Tyr	Asn 235	Trp	Ile	Gln	Asp	Lys 240
Cys Val	Pro	Leu	Val 245	Arg	Glu	Ile	Thr	Phe 250	Glu	Asn	Gly	Glu	Glu 255
Leu Thr	Glu	Glu	Gly 260	Leu	Pro	Phe	Leu	Ile 265	Leu	Phe	His	Met	Lys 270
Glu Asp	Thr	Glu	Ser 275	Leu	Glu	Ile	Phe	Gln 280	Asn	Glu	Val	Ala	Arg 285
Gln Leu	Ile	Ser	Glu	Lvs	Glv	Thr	Tle	Asn	Pho	T.eu	Hie	Δla	7 en
			290	-1-	1			295	1110	Lou	1113	нια	300
Cys Asp			290					295					300
Cys Asp	Lys	Phe	290 Arg 305	His	Pro	Leu	Leu	295 His 310	Ile	Gln	Lys	Thr	300 Pro 315
	Lys Cys	Phe Pro	290 Arg 305 Val 320	His Ile	Pro Ala	Leu Ile	Leu Asp	295 His 310 Ser 325	Ile Phe	Gln Arg	Lys His	Thr Met	300 Pro 315 Tyr 330
Ala Asp	Lys Cys Gly	Phe Pro Asp	290 Arg 305 Val 320 Phe 335	His Ile Lys	Pro Ala Asp	Leu Ile Val	Leu Asp Leu	295 His 310 Ser 325 Ile 340	Ile Phe Pro	Gln Arg Gly	Lys His Lys	Thr Met Leu	300 Pro 315 Tyr 330 Lys 345
Ala Asp	Lys Cys Gly Val	Phe Pro Asp Phe	290 Arg 305 Val 320 Phe 335 Asp 350	His Ile Lys Leu	Pro Ala Asp	Leu Ile Val Ser	Leu Asp Leu Gly	295 His 310 Ser 325 Ile 340 Lys 355	Ile Phe Pro Leu	Gln Arg Gly His	Lys His Lys Arg	Thr Met Leu Glu	300 Pro 315 Tyr 330 Lys 345 Phe 360
Ala Asp Val Phe Gln Phe	Lys Cys Gly Val	Phe Pro Asp Phe Pro	290 Arg 305 Val 320 Phe 335 Asp 350 Asp 365	His Ile Lys Leu Pro	Pro Ala Asp His	Leu Ile Val Ser Asp	Leu Asp Leu Gly	295 His 310 Ser 325 Ile 340 Lys 355 Ala 370	Ile Phe Pro Leu Pro	Gln Arg Gly His	Lys His Lys Arg	Thr Met Leu Glu	300 Pro 315 Tyr 330 Lys 345 Phe 360 Ala 375

Leu

<210> 310 <211> 182

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<400> 312

tgagaggcct ctctggaagt tg 22

```
<222> 36, 48
<223> unknown base
<400> 310
attaaggaag aatttccaaa tgaaaatcaa gtagtntttg ccagagtnga 50
ttgtgatcag cactctgaca tagcccagag atacaggata agcaaatacc 100
caaccctcaa attgtttcgt aatgggatga tgatgaagag agaatacagg 150
ggtcagcgat cagtgaaagc attggcagat ta 182
<210> 311
<211> 598
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 38, 59, 140, 169, 174, 183, 282-283, 294-295, 319, 396
<223> unknown base
<400> 311
 agaggeetet etggaagttg teeegggtgt tegeegengg ageeegggte 50
 gagaggacna ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 100
 cggagcccag ccctttccta acccaaccca acctagcccn gtcccagccg 150
 ccagegectg teeetgtene gganeecage gtnaceatge atectgeegt 200
 cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 250
 gggtttttac tcctgtaaca actgaaataa cnngtcttga tacnnagaat 300
 atagatgaaa ttttaaacna tgctgatgtg gctttagtca atttttatgc 350
 tgactggtgt cgtttcagtc agatgtggca tccaattttt gaggangctt 400
 ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 450
 agagttgatt gtgatcagca ctctgacata gcccagagat acaggataag 500
 caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 550
 aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggc 598
<210> 312
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
```

```
<210> 313
<211> 19
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 313
gtcagcgatc agtgaaagc 19
<210> 314
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 314
ccagaatgaa gtagctcggc 20
<210> 315
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 315
ccgactcaaa atgcattgtc 20
<210> 316
<211> 19
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 316
 catttggcag gaattgtcc 19
<210> 317
<211> 18
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 317
 ggtgctatag gccaaggg 18
<210> 318
<211> 24
<212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 318
ctqtatctct gggctatgtc agag 24
<210> 319
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 319
 ctacatataa tggcacatgt cagcc 25
<210> 320
<211> 46
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
 cgtcttccta tccttacccg acctcagatg ctcccttctg ctcctg 46
<210> 321
<211> 1333
<212> DNA
<213> Homo sapiens
<400> 321
 gcccacgcgt ccgatggcgt tcacgttcgc ggccttctgc tacatgctgg 50
 cgctgctgct cactgccgcg ctcatcttct tcgccatttg gcacattata 100
 gcatttgatg agctgaagac tgattacaag aatcctatag accagtgtaa 150
 taccctgaat ccccttgtac tcccagagta cctcatccac gctttcttct 200
 gtgtcatgtt tctttgtgca gcagagtggc ttacactggg tctcaatatg 250
 cccctcttgg catatcatat ttggaggtat atgagtagac cagtgatgag 300
 tggcccagga ctctatgacc ctacaaccat catgaatgca gatattctag 350
 catattgtca gaaggaagga tggtgcaaat tagcttttta tcttctagca 400
 tttttttact acctatatgg catgatctat gttttggtga gctcttagaa 450
 caacacacag aagaattggt ccagttaagt gcatgcaaaa agccaccaaa 500
 tgaagggatt ctatccagca agatcctgtc caagagtagc ctgtggaatc 550
```

tgatcagtta ctttaaaaaa tgactcctta ttttttaaat gtttccacat 600 ttttgcttgt ggaaagactg ttttcatatg ttatactcag ataaagattt 650 taaatggtat tacgtataaa ttaatataaa atgattacct ctggtgttga 700 caggtttgaa cttgcacttc ttaaggaaca gccataatcc tctgaatgat 750 qcattaatta ctgactgtcc tagtacattg gaagcttttg tttataggaa 800 cttgtagggc tcattttggt ttcattgaaa cagtatctaa ttataaatta 850 qctqtaqata tcaqqtqctt ctqatqaaqt qaaaatgtat atctgactag 900 tgggaaactt catgggtttc ctcatctgtc atgtcgatga ttatatatgg 950 atacatttac aaaaataaaa agcgggaatt ttcccttcgc ttgaatatta 1000 tccctgtata ttgcatgaat gagagatttc ccatatttcc atcagagtaa 1050 taaatatact tgctttaatt cttaagcata agtaaacatg atataaaaat 1100 atatgctgaa ttacttgtga agaatgcatt taaagctatt ttaaatgtgt 1150 ttttatttgt aagacattac ttattaagaa attggttatt atgcttactg 1200 ttctaatctg gtggtaaagg tattcttaag aatttgcagg tactacagat 1250 tttcaaaact gaatgagaga aaattgtata accatcctgc tgttccttta 1300 gtgcaataca ataaaactct gaaattaaga ctc 1333

<210> 322

<211> 144

<212> PRT

<213> Homo sapiens

<400> 322

Met Ala Phe Thr Phe Ala Ala Phe Cys Tyr Met Leu Ala Leu Leu 1 5 10 15

Leu Thr Ala Ala Leu Ile Phe Phe Ala Ile Trp His Ile Ile Ala 20 25 30

Phe Asp Glu Leu Lys Thr Asp Tyr Lys Asn Pro Ile Asp Gln Cys
35 40 45

Asn Thr Leu Asn Pro Leu Val Leu Pro Glu Tyr Leu Ile His Ala 50 55 60

Phe Phe Cys Val Met Phe Leu Cys Ala Ala Glu Trp Leu Thr Leu 65 70 75

Gly Leu Asn Met Pro Leu Leu Ala Tyr His Ile Trp Arg Tyr Met
80 85 90

Ser Arg Pro Val Met Ser Gly Pro Gly Leu Tyr Asp Pro Thr Thr 95 100 105

```
Ile Met Asn Ala Asp Ile Leu Ala Tyr Cys Gln Lys Glu Gly Trp
                 110
Cys Lys Leu Ala Phe Tyr Leu Leu Ala Phe Phe Tyr Tyr Leu Tyr
                                     130
                 125
Gly Met Ile Tyr Val Leu Val Ser Ser
                 140
<210> 323
<211> 477
<212> DNA
<213> Homo sapiens
<400> 323
 attatagcat ttgatgagct gaagactgat tacaagatcc tatagaccag 50
 tgtaataccc tgaatcccct tgtactccca gagtacctca tccacgcttt 100
 cttctgtgtc atgtttcttt gtgcagcaga gtggcttaca ctgggtctca 150
 atatgcccct cttggcatat catatttgga ggtatatgag tagaccagtg 200
 atgagtggcc caggactcta tgaccctaca accatcatga atgcagatat 250
 tctagcatat tgtcagaagg aaggatggtg caaattagct ttttatcttc 300
 tagcattttt ttactaccta tatggcatga tctatgtttt ggtgagctct 350
 tagaacaaca cacagaagaa ttggtccagt taagtgcatg caaaaagcca 400
 ccaaatgaag ggattctatc cagcaagatc ctgtccaaga gtagcctgtg 450
 gaatctgatc agttacttta aaaaatg 477
<210> 324
<211> 43
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 324
 tgtaaaacga cggccagtta aatagacctg caattattaa tct 43
<210> 325
<211> 41
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 325
 caggaaacag ctatgaccac ctgcacacct gcaaatccat t 41
<210> 326
```

```
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 326
gtgcagcaga gtggcttaca 20
<210> 327
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 327
actggaccaa ttcttctgtg 20
<210> 328
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 328
 qatattctaq catattgtca gaaggaagga tggtgcaaat tagct 45
<210> 329
<211> 1174
<212> DNA
<213> Homo sapiens
<400> 329
 cggacgcgtg ggggaaaccc ttccgagaaa acagcaacaa gctgagctgc 50
 tgtgacagag gggaacaaga tggcggcgcc gaaggggagc ctctgggtga 100
 ggacccaact ggggctcccg ccgctgctgc tgctgaccat ggccttggcc 150
 ggaggttcgg ggaccgcttc ggctgaagca tttgactcgg tcttgggtga 200
 tacggcgtct tgccaccggg cctgtcagtt gacctacccc ttgcacacct 250
 accctaagga agaggagttg tacgcatgtc agagaggttg caggctgttt 300
 tcaatttgtc agtttgtgga tgatggaatt gacttaaatc gaactaaatt 350
 ggaatgtgaa tctgcatgta cagaagcata ttcccaatct gatgagcaat 400
 atgcttgcca tcttggttgc cagaatcagc tgccattcgc tgaactgaga 450
 caagaacaac ttatgtccct gatgccaaaa atgcacctac tctttcctct 500
```

aactetggtg aggteattet ggagtgacat gatggactee geacagaget 550 teataacete tteatggact ttttatette aageegatga eggaaaaata 600 gttatattee agtetaagee agaaateeag taegeaceae atttggagea 650 ggageetaca aatttgagag aateateet aageaaaatg teetatetge 700 aaatgagaaa tteacaageg cacaggaatt ttettgaaga tggagaaagt 750 gatggettt taagatgeet etetetaae tetgggtgga ttttaactae 800 aactettgte eteteggtga tggtattget ttggatttgt tgtgeaactg 850 ttgetacage tgtggageag tatgtteet etgagaaget gagtatetat 900 ggtgaettgg agttatgaa tgaacaaaag etaaacagat ateeagette 950 tteettgtg gttgttagat etaaaactga agateatgaa gaageaggge 1000 etetacetae aaaagtgaat ettgeteatt etgaaattta ageatttte 1050 ttttaaaaag eaagtgtaat agacatetaa aatteeacte eteatagage 1100 ttttaaaag gttteattgg atataggeet taagaaatea etaaaaatg 1150 caaataaagt taeteaaate tgtg 1174

<210> 330

<211> 323

<212> PRT

<213> Homo sapiens

<400> 330

Met Ala Ala Pro Lys Gly Ser Leu Trp Val Arg Thr Gln Leu Gly
1 5 10 15

Leu Pro Pro Leu Leu Leu Thr Met Ala Leu Ala Gly Gly Ser 20 25 30

Gly Thr Ala Ser Ala Glu Ala Phe Asp Ser Val Leu Gly Asp Thr 35 40 45

Ala Ser Cys His Arg Ala Cys Gln Leu Thr Tyr Pro Leu His Thr
50 55 60

Tyr Pro Lys Glu Glu Glu Leu Tyr Ala Cys Gln Arg Gly Cys Arg 65 70 75

Leu Phe Ser Ile Cys Gln Phe Val Asp Asp Gly Ile Asp Leu Asn 80 85 90

Arg Thr Lys Leu Glu Cys Glu Ser Ala Cys Thr Glu Ala Tyr Ser 95 100 105

Gln Ser Asp Glu Gln Tyr Ala Cys His Leu Gly Cys Gln Asn Gln 110 115 120 Leu Pro Phe Ala Glu Leu Arg Gln Glu Gln Leu Met Ser Leu Met 135 Pro Lys Met His Leu Leu Phe Pro Leu Thr Leu Val Arg Ser Phe 145 140 Trp Ser Asp Met Met Asp Ser Ala Gln Ser Phe Ile Thr Ser Ser 155 Trp Thr Phe Tyr Leu Gln Ala Asp Asp Gly Lys Ile Val Ile Phe 170 Gln Ser Lys Pro Glu Ile Gln Tyr Ala Pro His Leu Glu Gln Glu 190 Pro Thr Asn Leu Arg Glu Ser Ser Leu Ser Lys Met Ser Tyr Leu 210 Gln Met Arg Asn Ser Gln Ala His Arg Asn Phe Leu Glu Asp Gly 225 Glu Ser Asp Gly Phe Leu Arg Cys Leu Ser Leu Asn Ser Gly Trp 230 240 Ile Leu Thr Thr Thr Leu Val Leu Ser Val Met Val Leu Leu Trp 245 Ile Cys Cys Ala Thr Val Ala Thr Ala Val Glu Gln Tyr Val Pro 260 Ser Glu Lys Leu Ser Ile Tyr Gly Asp Leu Glu Phe Met Asn Glu 275 Gln Lys Leu Asn Arg Tyr Pro Ala Ser Ser Leu Val Val Val Arg 300 Ser Lys Thr Glu Asp His Glu Glu Ala Gly Pro Leu Pro Thr Lys 315 Val Asn Leu Ala His Ser Glu Ile

<210> 331

<211> 350

<212> DNA

<213> Homo sapiens

320

<400> 331

ttgggtgata cggcgtcttg ccaccgggcc tgtcagttga cctaccctt 50 gcacacctac cctaaggaag aggagttgta cgcatgtcag agaggttgca 100 ggctgtttc aatttgtcag tttgtggatg atggaattga cttaaatcga 150 actaaattgg aatgtgaatc tgcatgtaca gaagcatatt cccaatctga 200 tgagcaatat gcttgccatc ttggttgcca gaatcagctg ccattcgctg 250

```
tttcctctaa ctctggtgag gtcattctgg agtgacatga tggactccgc 350
<210> 332
<211> 562
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 47
<223> unknown base
<400> 332
 cacactggcc ggatctttta gagtcctttg accttgacca agggtcngga 50
 aaacagcaac aagctgagct gctgtgacag agggaacaag atggcggcgc 100
 cgaagggagc ctttgggtga ggacccaact ggggctcccg ccgctgctgc 150
 tgctgaccat ggccttggcc ggaggttcgg ggaccgcttc ggctgaagca 200
 tttgactcgg tcttgggtga tacggcgtct tgccaccggg cctgtcagtt 250
 gacctacccc ttgcacacct accctaagga agaggagttg tacgcatgtc 300
 agagaggttg caggctgttt tcaatttgtc agtttgtgga tgatggaatt 350
 gacttaaatc gaactaaatt ggaatgtgaa tctgcatgta cagaagcata 400
 ttcccaatct gatgagcaat atgcttgcca tcttggttgc cagaatcagc 450
 tgccattcgc tgaactgaga caagaacaac ttatgtccct gatgccaaaa 500
 atgcacctac tctttcctct aactctggtg aggtcattct ggagtgacat 550
 gatggactcc gc 562
<210> 333
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
.<223> Synthetic oligonucleotide probe
<400> 333
 acaagctgag ctgctgtgac ag 22
<210> 334
 <211> 22
 <212> DNA
<213> Artificial Sequence
 <220>
<223> Synthetic oligonucleotide probe
```

aactgagaca agaacaactt atgtccctga tgccaaaaat gcacctactc 300

```
<400> 334
tgattctggc aaccaagatg gc 22
<210> 335
<211> 40
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 335
 atggccttgg ccggaggttc ggggaccgct tcggctgaag 40
<210> 336
<211> 1885
<212> DNA
<213> Homo sapiens
<400> 336
 gcgaggtggc gatcgctgag aggcaggagg gccgaggcgg gcctgggagg 50
 cggcccggag gtggggcgc gctggggccg gcccgcacgg gcttcatctg 100
 agggcgcacg gcccgcgacc gagcgtgcgg actggcctcc caagcgtggg 150
 gcgacaagct gccggagctg caatgggccg cggctgggga ttcttgtttg 200
 gcctcctggg cgccgtgtgg ctgctcagct cgggccacgg agaggagcag 250
 ccccggaga cagcggcaca gaggtgcttc tgccaggtta gtggttactt 300
 ggatgattgt acctgtgatg ttgaaaccat tgatagattt aataactaca 350
 ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400
 tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450
 gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagttc 500
 ctgatggaat taaatctgcg agctacaagt attctgaaga agccaataat 550
 ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600
 tctgagtgag gaaacacaga aggctgttct tcagtggacc aagcatgatg 650
 attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700
 gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750
 accagatgct tggaaaatat ggaatgtcat ctacgaagaa aactgtttta 800
 agccacagac aattaaaaga cctttaaatc ctttggcttc tggtcaaggg 850
 acaagtgaag agaacacttt ttacagttgg ctagaaggtc tctgtgtaga 900
 aaaaagagca ttctacagac ttatatctgg cctacatgca agcattaatg 950
```

tggggacaca acattacaga atttcaacag cgatttgatg gaattttgac 1050 tgaaggagaa ggtccaagaa ggcttaagaa cttgtatttt ctctacttaa 1100 tagaactaag ggctttatcc aaagtgttac cattcttcga gcgcccagat 1150 tttcaactct ttactggaaa taaaattcag gatgaggaaa acaaaatgtt 1200 acttctggaa atacttcatg aaatcaagtc atttcctttg cattttgatg 1250 agaattcatt ttttgctggg gataaaaaag aagcacacaa actaaaggag 1300 gactttcgac tgcattttag aaatatttca agaattatgg attgtgttgg 1350 ttgttttaaa tgtcgtctgt ggggaaagct tcagactcag ggtttgggca 1400 ctgctctgaa gatcttattt tctgagaaat tgatagcaaa tatgccagaa 1450 agtggaccta gttatgaatt ccatctaacc agacaagaaa tagtatcatt 1500 attcaacgca tttggaagaa tttctacaag tgtgaaagaa ttagaaaact 1550 tcaggaactt gttacagaat attcattaaa gaaaacaagc tgatatgtgc 1600 ctgtttctgg acaatggagg cgaaagagtg gaatttcatt caaaggcata 1650 atagcaatga cagtottaag ccaaacattt tatataaagt tgcttttgta 1700 aaggagaatt atattgtttt aagtaaacac atttttaaaa attgtgttaa 1750 gtctatgtat aatactactg tgagtaaaag taatacttta ataatgtggt 1800 acaaatttta aagtttaata ttgaataaaa ggaggattat caaattaaaa 1850 aaaaaaaaaa aaaaaaaaaa aaaaaaaaa 1885

<210> 337

<211> 468

<212> PRT

<213> Homo sapiens

<400> 337

Met Gly Arg Gly Trp Gly Phe Leu Phe Gly Leu Leu Gly Ala Val 1 5 10 15

Trp Leu Leu Ser Ser Gly His Gly Glu Glu Gln Pro Pro Glu Thr
20 25 30

Ala Ala Gln Arg Cys Phe Cys Gln Val Ser Gly Tyr Leu Asp Asp 35 40 45

Cys Thr Cys Asp Val Glu Thr Ile Asp Arg Phe Asn Asn Tyr Arg 50 55 60

Leu Phe Pro Arg Leu Gln Lys Leu Leu Glu Ser Asp Tyr Phe Arg 65 70 75

Tyr Tyr Lys Val Asn Leu Lys Arg Pro Cys Pro Phe Trp Asn Asp Ile Ser Gln Cys Gly Arg Arg Asp Cys Ala Val Lys Pro Cys Gln Ser Asp Glu Val Pro Asp Gly Ile Lys Ser Ala Ser Tyr Lys Tyr 110 Ser Glu Glu Ala Asn Asn Leu Ile Glu Glu Cys Glu Gln Ala Glu 125 Arg Leu Gly Ala Val Asp Glu Ser Leu Ser Glu Glu Thr Gln Lys Ala Val Leu Gln Trp Thr Lys His Asp Asp Ser Ser Asp Asn Phe 165 Cys Glu Ala Asp Asp Ile Gln Ser Pro Glu Ala Glu Tyr Val Asp 170 Leu Leu Leu Asn Pro Glu Arg Tyr Thr Gly Tyr Lys Gly Pro Asp 185 Ala Trp Lys Ile Trp Asn Val Ile Tyr Glu Glu Asn Cys Phe Lys Pro Gln Thr Ile Lys Arg Pro Leu Asn Pro Leu Ala Ser Gly Gln Gly Thr Ser Glu Glu Asn Thr Phe Tyr Ser Trp Leu Glu Gly Leu Cys Val Glu Lys Arg Ala Phe Tyr Arg Leu Ile Ser Gly Leu His Ala Ser Ile Asn Val His Leu Ser Ala Arg Tyr Leu Leu Gln Glu Thr Trp Leu Glu Lys Lys Trp Gly His Asn Ile Thr Glu Phe Gln Gln Arg Phe Asp Gly Ile Leu Thr Glu Gly Glu Gly Pro Arg Arg Leu Lys Asn Leu Tyr Phe Leu Tyr Leu Ile Glu Leu Arg Ala Leu Ser Lys Val Leu Pro Phe Phe Glu Arg Pro Asp Phe Gln Leu Phe Thr Gly Asn Lys Ile Gln Asp Glu Glu Asn Lys Met Leu Leu 335 340 Glu Ile Leu His Glu Ile Lys Ser Phe Pro Leu His Phe Asp Glu Asn Ser Phe Phe Ala Gly Asp Lys Lys Glu Ala His Lys Leu Lys

370 375 365 Glu Asp Phe Arg Leu His Phe Arg Asn Ile Ser Arg Ile Met Asp 380 Cys Val Gly Cys Phe Lys Cys Arg Leu Trp Gly Lys Leu Gln Thr 400 Gln Gly Leu Gly Thr Ala Leu Lys Ile Leu Phe Ser Glu Lys Leu 415 Ile Ala Asn Met Pro Glu Ser Gly Pro Ser Tyr Glu Phe His Leu 435 Thr Arg Gln Glu Ile Val Ser Leu Phe Asn Ala Phe Gly Arg Ile Ser Thr Ser Val Lys Glu Leu Glu Asn Phe Arg Asn Leu Leu Gln 465 Asn Ile His <210> 338 <211> 507 <212> DNA <213> Homo sapiens <220> <221> unsure <222> 101, 263, 376, 397, 426 <223> unknown base <400> 338 gctggaaata tggatgtcat ctacgagaaa ctgttttaag ccacagacaa 50 ttaaaagacc tttaaatcct ttggcttctg gtcaagggac aagtgaagag 100 nacacttttt acagttggct agaaggtctc tgtgtagaaa aaagagcatt 150 ctacagactt atatctggcc tacatgcaag cattaatgtg catttgagtg 200 caagatatct tttacaagag acctggttag aaaagaaatg gggacacaac 250 attacagaat ttnaacagcg atttgatgga attttgactg aaggagaagg 300 tccaaqaagg cttaagaact tgtattttct ctacttaata gaactaaggg 350 ctttatccaa agtgttacca ttcttngagc gcccagattt tcaactnttt 400 actggaaata aaattcagga tgaggnaaac aaaatgttac ttttggaaat 450 acttcatgaa atcaagtcat ttcctttgca ttttgatgag aattcatttt 500

<210> 339 <211> 20

tttgctg 507

```
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 339
 aagctgccgg agctgcaatg 20
<210> 340
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 340
ttgcttctta atcctgagcg c 21
<210> 341
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 341
aaaggaggac tttcgactgc 20
<210> 342
<211> 26
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 342
 agagattcat ccactgctcc aagtcg 26
<210> 343
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 343
tgtccagaaa caggcacata tcagc 25
<210> 344
<211> 50
<212> DNA
<213> Artificial Sequence
```

```
<220>
<223> Synthetic oligonucleotide probe
<400> 344
agacagcggc acagaggtgc ttctgccagg ttagtggtta cttggatgat 50
<210> 345
<211> 1486
<212> DNA
<213> Homo sapiens
<400> 345
 cggacgcgtg ggcggacgcg tgggcggacg cgtgggttgg gagggggcag 50
 gatgggaggg aaagtgaaga aaacagaaaa ggagagggac agaggccaga 100
 ggacttctca tactggacag aaaccgatca ggcatggaac tccccttcgt 150
 cactcacctg ttcttgcccc tggtgttcct gacaggtctc tgctcccct 200
 ttaacctgga tgaacatcac ccacgcctat tcccagggcc accagaagct 250
 gaatttggat acagtgtctt acaacatgtt gggggtggac agcgatggat 300
 gctggtgggc gccccctggg atgggccttc aggcgaccgg aggggggacg 350
 tttatcgctg ccctgtaggg ggggcccaca atgccccatg tgccaagggc 400
 cacttaggtg actaccaact gggaaattca tctcatcctg ctgtgaatat 450
 qcacctgggg atgtctctgt tagagacaga tggtgatggg ggattcatgg 500
 tgagctaagg agagggtggt ggcagtgtct ctgaaggtcc ataaaagaaa 550
 aaagagaagt gtggtaaggg aaaatggtct gtgtggaggg gtcaaggagt 600
 taaaaaaccct agaaagcaaa aggtaggtaa tgtcagggag tagtcttcat 650
 gcctccttca actgggagca tgttctgagg gtgccctccc aagcctggga 700
```

gtaactattt cccccatccc caggcctgtg cccctctctg gtctcgtgct 750

tgtggcagct ctgtcttcag ttctgggata tgtgcccgtg tggatgcttc 800

attocageet cagggaagee tggcacceae tgcccaaegt gagccagagg 850

aaggctgagt acttggttcc cagaaggaga tactgggtgg gaaaaagatg 900

gggcaaagcg gtatgatgcc tggcaaaggg cctgcatggc tatcctcatt 950

gctacctaat gtgcttgcaa aagctccatg tttcctaaca gattcagact 1000

cctggccagg tgtggtggcc cacacctgta attctagcac tttgggaggc 1050

caaggtgggc agatcacttg aggtcaggag ttcaagacca gcctggccaa 1100

catggtgaaa ctccatctct actaaaaaaa aaaaaataca aaaattagct 1150

gggtgcgcta gtgcatgcct gtaatctcat ctactcggga ggctaagaca 1200 ggagactctc acttcaaccc aggaggtgga ggttgcggtg agccaagatt 1250 gtgcctctgc actctagcgt gggtgacaga gtaagcgaga ctccatctca 1300 aaaataataa taataataat tcagactcct tatcaggagt ccatgatctg 1350 gcctggcaca gtaactcatg cctgtaatcc caacattttg ggaggccaac 1400 gcaggaggat tgcttgaggt ctggaggttt gagaccagcc tgggcaacat 1450 agaaagaccc catctctaaa taaatgtttt aaaaat 1486

<210> 346

<211> 124

<212> PRT

<213> Homo sapiens

<400> 346

Met Glu Leu Pro Phe Val Thr His Leu Phe Leu Pro Leu Val Phe 1 5 10 15

Leu Thr Gly Leu Cys Ser Pro Phe Asn Leu Asp Glu His His Pro 20 25 30

Arg Leu Phe Pro Gly Pro Pro Glu Ala Glu Phe Gly Tyr Ser Val 35 40 45

Leu Gln His Val Gly Gly Gly Gln Arg Trp Met Leu Val Gly Ala
50 55 60

Pro Trp Asp Gly Pro Ser Gly Asp Arg Arg Gly Asp Val Tyr Arg 65 70 75

Cys Pro Val Gly Gly Ala His Asn Ala Pro Cys Ala Lys Gly His 80 85 90

Leu Gly Asp Tyr Gln Leu Gly Asn Ser Ser His Pro Ala Val Asn 95 100 105

Met His Leu Gly Met Ser Leu Leu Glu Thr Asp Gly Asp Gly Gly 110 115 120

Phe Met Val Ser

<210> 347

<211> 509

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 22

<223> unknown base

<400> 347

<212> DNA

```
cacagttccc caccatcact cntcccattc cttccaactt tatttttagc 50
ttgccattgg gaggggcag gatgggaggg aaagtgaaga aaacagaaaa 100
ggagagggac agaggccaga ggacttctca tactggacag aaaccgatca 150
ggcatggaac tccccttcgt cactcacctg ttcttgcccc tggtgttcct 200
gacaggtete tgetececet ttaacetgga tgaacateae ceaegeetat 250
teccagggee accagaaget gaatttggat acagtgtett acaacatgtt 300
gggggtggac agcgatggat gctggtgggc gcccctggg atgggccttc 350
aggcgaccgg aggggggacg tttatcgctg ccctgtaggg ggggcccaca 400
atgccccatg tgccaagggc cacttaggtg actaccaact gggaaattca 450
tctcatcctg ctgtgaatat gcacctgggg atgtctctgt tagagacaga 500
tggtgatgg 509
<210> 348
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 348
agggacagag gccagaggac ttc 23
<210> 349
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 349
caggtgcata ttcacagcag gatg 24
<210> 350
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 350
ggaactcccc ttcgtcactc acctgttctt gcccctggtg ttcct 45
<210> 351
<211> 2056
```

<400> 351 aaagttacat tttctctgga actctcctag gccactccct gctgatgcaa 50 catctgggtt tgggcagaaa ggagggtgct tcggagcccg ccctttctga 100 gcttcctggg ccggctctag aacaattcag gcttcgctgc gactcagacc 150 tcagctccaa catatgcatt ctgaagaaag atggctgaga tggacagaat 200 gctttatttt ggaaagaaac aatgttctag gtcaaactga gtctaccaaa 250 tgcagacttt cacaatggtt ctagaagaaa tctggacaag tcttttcatg 300 tggtttttct acgcattgat tccatgtttg ctcacagatg aagtggccat 350 tetgeetgee ceteagaace tetetgtact eteaaceaac atgaageate 400 tcttgatgtg gagcccagtg atcgcgcctg gagaaacagt gtactattct 450 gtcgaatacc agggggagta cgagagcctg tacacgagcc acatctggat 500 ccccagcagc tggtgctcac tcactgaagg tcctgagtgt gatgtcactg 550 atgacatcac ggccactgtg ccatacaacc ttcgtgtcag ggccacattg 600 ggctcacaga cctcagcctg gagcatcctg aagcatccct ttaatagaaa 650 ctcaaccatc cttacccgac ctgggatgga gatcaccaaa gatggcttcc 700 acctggttat tgagctggag gacctggggc cccagtttga gttccttgtg 750 gcctactgga ggagggagcc tggtgccgag gaacatgtca aaatggtgag 800 gagtgggggt attccagtgc acctagaaac catggagcca ggggctgcat 850 actgtgtgaa ggcccagaca ttcgtgaagg ccattgggag gtacagcgcc 900 ttcagccaga cagaatgtgt ggaggtgcaa ggagaggcca ttcccctggt 950 actggccctg tttgcctttg ttggcttcat gctgatcctt gtggtcgtgc 1000 cactgttcgt ctggaaaatg ggccggctgc tccagtactc ctgttgcccc 1050 gtggtggtcc tcccagacac cttgaaaata accaattcac cccagaagtt 1100 aatcagctgc agaagggagg aggtggatgc ctgtgccacg gctgtgatgt 1150 ctcctgagga actcctcagg gcctggatct cataggtttg cggaagggcc 1200 caggtgaagc cgagaacctg gtctgcatga catggaaacc atgaggggac 1250 aagttgtgtt tctgttttcc gccacggaca agggatgaga gaagtaggaa 1300 gagcctgttg tctacaagtc tagaagcaac catcagaggc agggtggttt 1350 gtctaacaga acactgactg aggcttaggg gatgtgacct ctagactggg 1400

ggctgccact tgctggctga gcaaccctgg gaaaagtgac ttcatccctt 1450 cggtcctaag ttttctcatc tgtaatgggg gaattaccta cacacctgct 1500 aaacacacac acacagagtc tctctctata tatacacacg tacacataaa 1550 tacacccagc acttgcaagg ctagagggaa actggtgaca ctctacagtc 1600 tgactgattc agtgttctg gagagcagga cataaatgta tgatgagaat 1650 gatcaaggac tctacacact gggtggcttg gagagccac tttcccagaa 1700 taatccttga gagaaaagga atcatgggag caatggtgt gagttcactt 1750 caagcccaat gccggtgcag aggggaatgg cttagcgagc tctacagtag 1800 gtgacctgga ggaaggtcac agccacactg aaaatgggat gtgcatgaac 1850 acggaggatc catgaactac tgtaaagtgt tgacagtgg tgcacactgc 1900 agacagcagg tgaaatgtat gtgtgcaatg cgacgagaat gcagaagtca 1950 gtaacatgtg catgtttgtt gtgctccttt tttctgttgg taaagtacag 2000 aattcagcaa ataaaaaggg ccaccctggc caaaagcggt aaaaaaaaa 2050 aaaaaaa 2056

<210> 352

<211> 311

<212> PRT

<213> Homo sapiens

<400> 352

Met Gln Thr Phe Thr Met Val Leu Glu Glu Ile Trp Thr Ser Leu
1 5 10 15

Phe Met Trp Phe Phe Tyr Ala Leu Ile Pro Cys Leu Leu Thr Asp 20 25 30

Glu Val Ala Ile Leu Pro Ala Pro Gln Asn Leu Ser Val Leu Ser 35 40 45

Thr Asn Met Lys His Leu Leu Met Trp Ser Pro Val Ile Ala Pro 50 55 60

Gly Glu Thr Val Tyr Tyr Ser Val Glu Tyr Gln Gly Glu Tyr Glu
65 70 75

Ser Leu Tyr Thr Ser His Ile Trp Ile Pro Ser Ser Trp Cys Ser 80 85 90

Leu Thr Glu Gly Pro Glu Cys Asp Val Thr Asp Asp Ile Thr Ala 95 100 105

Thr Val Pro Tyr Asn Leu Arg Val Arg Ala Thr Leu Gly Ser Gln
110 115 120

```
Thr Ser Ala Trp Ser Ile Leu Lys His Pro Phe Asn Arg Asn Ser
                125
Thr Ile Leu Thr Arg Pro Gly Met Glu Ile Thr Lys Asp Gly Phe
                                    145
                140
His Leu Val Ile Glu Leu Glu Asp Leu Gly Pro Gln Phe Glu Phe
                                    160
Leu Val Ala Tyr Trp Arg Arg Glu Pro Gly Ala Glu Glu His Val
Lys Met Val Arg Ser Gly Gly Ile Pro Val His Leu Glu Thr Met
Glu Pro Gly Ala Ala Tyr Cys Val Lys Ala Gln Thr Phe Val Lys
                                                         210
                200
Ala Ile Gly Arg Tyr Ser Ala Phe Ser Gln Thr Glu Cys Val Glu
                215
Val Gln Gly Glu Ala Ile Pro Leu Val Leu Ala Leu Phe Ala Phe
                                                         240
                230
Val Gly Phe Met Leu Ile Leu Val Val Pro Leu Phe Val Trp
                                     250
Lys Met Gly Arg Leu Leu Gln Tyr Ser Cys Cys Pro Val Val Val
                                                         270
                260
Leu Pro Asp Thr Leu Lys Ile Thr Asn Ser Pro Gln Lys Leu Ile
                275
Ser Cys Arg Arg Glu Glu Val Asp Ala Cys Ala Thr Ala Val Met
                                                         300
                 290
Ser Pro Glu Glu Leu Leu Arg Ala Trp Ile Ser
                 305
```

<210> 353

<211> 864

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 654, 711, 748, 827

<223> unknown base

<400> 353

tectgetgat geacatetgg gtttggeaaa aggaggttge ttegageege 50 cetttetage tteetggeeg getetagaae aatteagget tegetgegae 100 tagaceteag etecaacata tgeattetga agaaagatgg etgagatgae 150 agaatgettt attttggaaa gaaacaatgt tetaggteaa aetgagteta 200

```
ccaaatgcag actttcacaa tggttctaga agaaatctgg acaagtcttt 250
tcatgtggtt tttctacgca ttgattccat gtttgctcac agatgaagtg 300
qccattctqc ctgcccctca gaacctctct gtactctcaa ccaacatgaa 350
gcatctcttg atgtggagcc cagtgatcgc gcctggagaa acagtgtact 400
attctgtcga ataccagggg gagtacgaga gcctgtacac gagccacatc 450
tggatcccca gcagctggtg ctcactcact gaaggtcctg agtgtgatgt 500
cactgatgac atcacggcca ctgtgccata caacctttgt gtcagggcca 550
cattgggctc acagacctca gcctggagca tcctgaagca tccctttaat 600
agaaactcaa ccatccttac ccgacctggg atggagatca ccaaagatgg 650
cttncacctg gttattgagc tggaggacct ggggccccag tttgagttcc 700
ttgtggccta ntggaggagg ggcgaacccc ttgcggcgca aggggttngc 750
gaaccccttg cggccgctgg ggtatctctc gagaaaagag aggcccaata 800
tgacccacat actcaatatg gacgaantgc tattgtccac ctgtttgagt 850
ggcgctgggt tgat 864
<210> 354
<211> 23
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 354
aggetteget gegactagae etc 23
<210> 355
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 355
ccaggtcggg taaggatggt tgag 24
<210> 356
<211> 50
<212> DNA
<213> Artificial Sequence
```

<223> Synthetic oligonucleotide probe

<400> 356 tttctacgca ttgattccat gtttgctcac agatgaagtg gccattctgc 50

<210> 357

<211> 1670

<212> DNA

<213> Homo sapiens

<400> 357 cccacgcgtc cgcccacgcg tccgagggac aagagagaag agagactgaa 50 acagggagaa gaggcaggag aggaggaggt ggggagagca cgaagctgga 100 ggccgacact gagggaggc gggaggaggt gaagaaggag agaggggaga 150 agaggcagga gctggaaagg agagaggag gaggaggagg agatgcggga 200 tggagacctg gagttaggtg gcttgggaga gcttaatgaa aagagaacgg 250 agaggaggtg tgggttagga accaagaggt agccctgtgg gcagcagaag 300 gctgagagga gtaggaagat caggagctag agggagactg gagggttccg 350 aagagtgggt ttgaagggcg gatctcagtc cctggctgct ttggcatttg 450 gggaactggg actccctgtg gggaggagag gaaagctgga agtcctggag 500 ggacagggtc ccagaaggag gggacagagg agctgagaga gggggggcagg 550 gcgttgggca ggggtccctc ggaggcctcc tggggatggg ggctgcagct 600 cgtctgagcg cccctcgagc gctggtactc tgggctgcac tgggggcagc 650 ageteacate ggaceageae etgaceeega ggactggtgg agetacaagg 700 ataatctcca gggaaacttc gtgccagggc ctcctttctg gggcctggtg 750 aatgcagcgt ggagtctgtg tgctgtgggg aagcggcaga gccccgtgga 800 tgtggagctg aagagggttc tttatgaccc ctttctgccc ccattaaggc 850 tcagcactgg aggagagaag ctccggggaa ccttgtacaa caccggccga 900 catgtctcct tcctgcctgc accccgacct gtggtcaatg tgtctggagg 950 teceeteett tacageeace gaeteagtga aetgeggetg etgtttggag 1000 ctcgcgacgg agccggctcg gaacatcaga tcaaccacca gggcttctct 1050 gctgaggtgc agctcattca cttcaaccag gaactctacg ggaatttcag 1100 cyctycctcc cycygcccca atygcctygc cattetcayc ctctttytca 1150 acgttgccag tacctctaac ccattcctca gtcgcctcct taaccgcgac 1200 accatcactc gcatctccta caagaatgat gcctactttc ttcaagacct 1250 gagectggag etectgitee etgaateett eggetteate acetateagg 1300 geteteteag eacecegee tgeteegaga etgiteacetg gateeteatt 1350 gacegggee teaatateae eteceticag atgeaeteee tgagaeteet 1400 gagecagaat eetecatete agateticea gageeteage ggtaacagee 1450 ggeecetgea geeetiggee eacagggeae tgaggggeaa eagggaeeee 1500 eggeaeeeeg agaggegetg eegaggeeee aactacegee tgeatgigga 1550 tggtgieeee eatggieget gagaeteeee tiegaggatt geaeeegeee 1600 gteetaagee teeceacaag gegaggggag tiaeeeetaa aacaaageta 1650 ttaaagggae agaataetta 1670

- <210> 358
- <211> 328
- <212> PRT
- <213> Homo sapiens
- <400> 358
- Met Gly Ala Ala Ala Arg Leu Ser Ala Pro Arg Ala Leu Val Leu 1 5 10 15
- Trp Ala Ala Leu Gly Ala Ala Ala His Ile Gly Pro Ala Pro Asp 20 25 30
- Pro Glu Asp Trp Trp Ser Tyr Lys Asp Asn Leu Gln Gly Asn Phe 35 40 45
- Val Pro Gly Pro Pro Phe Trp Gly Leu Val Asn Ala Ala Trp Ser 50 55 60
- Leu Cys Ala Val Gly Lys Arg Gln Ser Pro Val Asp Val Glu Leu 65 70 75
- Lys Arg Val Leu Tyr Asp Pro Phe Leu Pro Pro Leu Arg Leu Ser 80 85 90
- Thr Gly Gly Glu Lys Leu Arg Gly Thr Leu Tyr Asn Thr Gly Arg 95 100 105
- His Val Ser Phe Leu Pro Ala Pro Arg Pro Val Val Asn Val Ser 110 115 120
- Gly Gly Pro Leu Leu Tyr Ser His Arg Leu Ser Glu Leu Arg Leu 125 130 135
- Leu Phe Gly Ala Arg Asp Gly Ala Gly Ser Glu His Gln Ile Asn 140 145 150
- His Gln Gly Phe Ser Ala Glu Val Gln Leu Ile His Phe Asn Gln 155 160 165
- Glu Leu Tyr Gly Asn Phe Ser Ala Ala Ser Arg Gly Pro Asn Gly

170 175 180 Leu Ala Ile Leu Ser Leu Phe Val Asn Val Ala Ser Thr Ser Asn 185 Pro Phe Leu Ser Arg Leu Leu Asn Arg Asp Thr Ile Thr Arg Ile 200 Ser Tyr Lys Asn Asp Ala Tyr Phe Leu Gln Asp Leu Ser Leu Glu 215 220 Leu Leu Phe Pro Glu Ser Phe Gly Phe Ile Thr Tyr Gln Gly Ser 230 Leu Ser Thr Pro Pro Cys Ser Glu Thr Val Thr Trp Ile Leu Ile Asp Arg Ala Leu Asn Ile Thr Ser Leu Gln Met His Ser Leu Arg 270 260 Leu Leu Ser Gln Asn Pro Pro Ser Gln Ile Phe Gln Ser Leu Ser Gly Asn Ser Arg Pro Leu Gln Pro Leu Ala His Arg Ala Leu Arg 290 Gly Asn Arg Asp Pro Arg His Pro Glu Arg Arg Cys Arg Gly Pro 305 Asn Tyr Arg Leu His Val Asp Gly Val Pro His Gly Arg 320 <210> 359 <211> 24 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 359 tctgctgagg tgcagctcat tcac 24 <210> 360 <211> 24 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 360 gaggetetgg aagatetgag atgg 24 <210> 361 <211> 50 <212> DNA <213> Artificial Sequence

```
<220>
<223> Synthetic oligonucleotide probe
<400> 361
  gcctctttgt caacgttgcc agtacctcta acccattcct cagtcgcctc 50
<210> 362
<211> 3038
<212> DNA
<213> Homo sapiens
<400> 362
  ggcgcctggt tctgcgcgta ctggctgtac ggagcaggag caagaggtcg 50
  ccgccagcct ccgccgcga gcctcgttcg tgtccccgc cctcgctcct 100
  gcagctactg ctcagaaacg ctggggcgcc caccctggca gactaacgaa 150
  gcagctccct tcccaccca actgcaggtc taattttgga cgctttgcct 200
  gccatttctt ccaggttgag ggagccgcag aggcggaggc tcgcgtattc 250
```

ccgccagcct ccgccgccga gcctcgttcg tgtccccgcc cctcgctcct 100 gcagctactg ctcagaaacg ctggggcgcc caccctggca gactaacgaa 150 gcagctccct tcccacccca actgcaggtc taattttgga cgctttgcct 200 qccatttctt ccaggttgag ggagccgcag aggcggaggc tcgcgtattc 250 ctgcagtcag cacccacgtc gcccccggac gctcggtgct caggcccttc 300 gcgagcgggg ctctccgtct gcggtccctt gtgaaggctc tgggcggctg 350 cagaggccgg ccgtccggtt tggctcacct ctcccaggaa acttcacact 400 ggagagccaa aaggagtgga agagcctgtc ttggagattt tcctggggaa 450 atcctgaggt cattcattat gaagtgtacc gcgcgggagt ggctcagagt 500 aaccacagtg ctgttcatgg ctagagcaat tccagccatg gtggttccca 550 atgccacttt attggagaaa cttttggaaa aatacatgga tgaggatggt 600 gagtggtgga tagccaaaca acgagggaaa agggccatca cagacaatga 650 catgcagagt attttggacc ttcataataa attacgaagt caggtgtatc 700 caacaqcctc taatatggag tatatgacat gggatgtaga gctggaaaga 750 tctgcagaat cctgggctga aagttgcttg tgggaacatg gacctgcaag 800 cttgcttcca tcaattggac agaatttggg agcacactgg ggaagatata 850 ggcccccgac gtttcatgta caatcgtggt atgatgaagt gaaagacttt 900 agctacccat atgaacatga atgcaaccca tattgtccat tcaggtgttc 950 tggccctgta tgtacacatt atacacaggt cgtgtgggca actagtaaca 1000 gaatcggttg tgccattaat ttgtgtcata acatgaacat ctgggggcag 1050 atatggccca aagctgtcta cctggtgtgc aattactccc caaagggaaa 1100 ctggtggggc catgcccctt acaaacatgg gcggccctgt tctgcttgcc 1150 cacctagttt tggaggggc tgtagagaaa atctgtgcta caaagaaggg 1200 tcagacaggt attatccccc tcgagaagag gaaacaaatg aaatagaacg 1250 acagcagtca caagtccatg acacccatgt ccggacaaga tcagatgata 1300 gtagcagaaa tgaagtcata agcgcacagc aaatgtccca aattgtttct 1350 tgtgaagtaa gattaagaga tcagtgcaaa ggaacaacct gcaataggta 1400 cgaatgtcct gctggctgtt tggatagtaa agctaaagtt attggcagtg 1450 tacattatga aatgcaatcc agcatctgta gagctgcaat tcattatggt 1500 ataatagaca atgatggtgg ctgggtagat atcactagac aaggaagaaa 1550 gcattatttc atcaagtcca atagaaatgg tattcaaaca attggcaaat 1600 atcagtctgc taattccttc acagtctcta aagtaacagt tcaggctgtg 1650 acttgtgaaa caactgtgga acagctctgt ccatttcata agcctgcttc 1700 acattgccca agagtatact gtcctcgtaa ctgtatgcaa gcaaatccac 1750 attatgctcg tgtaattgga actcgagttt attctgatct gtccagtatc 1800 tgcagagcag cagtacatgc tggagtggtt cgaaatcacg gtggttatgt 1850 tgatgtaatg cctgtggaca aaagaaagac ctacattgct tcttttcaga 1900 atggaatctt ctcagaaagt ttacagaatc ctccaggagg aaaggcattc 1950 agagtgtttg ctgttgtgtg aaactgaata cttggaagag gaccataaag 2000 actattccaa atgcaatatt tctgaatttt gtataaaact gtaacattac 2050 tgtacagagt acatcaacta ttttcagccc aaaaaggtgc caaatgcata 2100 taaatcttga taaacaaagt ctataaaata aaacatggga cattagcttt 2150 gggaaaagta atgaaaatat aatggtttta gaaatcctgt gttaaatatt 2200 gctatatttt cttagcagtt atttctacag ttaattacat agtcatgatt 2250 gttctacgtt tcatatatta tatggtgctt tgtatatgcc actaataaaa 2300 tgaatctaaa cattgaatgt gaatggccct cagaaaatca tctagtgcat 2350 ttaaaaataa tcgactctaa aactgaaaga aaccttatca cattttcccc 2400 agttcaatgc tatgccatta ccaactccaa ataatctcaa ataattttcc 2450 acttaataac tgtaaagttt ttttctgtta atttaggcat atagaatatt 2500 aaattctgat attgcacttc ttattttata taaaataatc ctttaatatc 2550 caaatgaatc tgttaaaatg tttgattcct tgggaatggc cttaaaaata 2600

aatgtaataa agtcagagtg gtggtatgaa aacattccta gtgatcatgt 2650 agtaaatgta gggttaagca tggacagcca gagctttcta tgtactgtta 2700 aaattgaggt cacatattt cttttgtatc ctggcaaata ctcctgcagg 2750 ccaggaagta taatagcaaa aagttgaaca aagatgaact aatgtattac 2800 attaccattg ccactgattt tttttaaatg gtaaatgacc ttgtatataa 2850 atattgccat atcatggtac ctataatggt gatatatttg tttctatgaa 2900 aaatgtattg tgctttgata ctaaaaaatct gtaaaatgtt agttttggta 2950 atttttttc tgctggtgga tttacatatt aaatttttc tgctggtgga 3000 taaacattaa aattaatcat gtttcaaaaa aaaaaaaa 3038

<210> 363

<211> 500

<212> PRT

<213> Homo sapiens

<400> 363

Met Lys Cys Thr Ala Arg Glu Trp Leu Arg Val Thr Thr Val Leu
1 5 10 15

Phe Met Ala Arg Ala Ile Pro Ala Met Val Val Pro Asn Ala Thr 20 25 30

Leu Leu Glu Lys Leu Glu Lys Tyr Met Asp Glu Asp Gly Glu 35 40 45

Trp Trp Ile Ala Lys Gln Arg Gly Lys Arg Ala Ile Thr Asp Asn 50 55 60

Asp Met Gln Ser Ile Leu Asp Leu His Asn Lys Leu Arg Ser Gln 65 70 75

Val Tyr Pro Thr Ala Ser Asn Met Glu Tyr Met Thr Trp Asp Val 80 85 90

Glu Leu Glu Arg Ser Ala Glu Ser Trp Ala Glu Ser Cys Leu Trp 95 100 105

Glu His Gly Pro Ala Ser Leu Leu Pro Ser Ile Gly Gln Asn Leu 110 115 120

Gly Ala His Trp Gly Arg Tyr Arg Pro Pro Thr Phe His Val Gln 125 130 135

Ser Trp Tyr Asp Glu Val Lys Asp Phe Ser Tyr Pro Tyr Glu His
140 145

Glu Cys Asn Pro Tyr Cys Pro Phe Arg Cys Ser Gly Pro Val Cys

Thr His Tyr Thr Gln Val Val Trp Ala Thr Ser Asn Arg Ile Gly

			170					175					180
Cys Ala	Ile	Asn	Leu 185	Cys	His	Asn	Met	Asn 190	Ile	Trp	Gly	Gln	Ile 195
Trp Pro	Lys	Ala	Val 200	Tyr	Leu	Val	Cys	Asn 205	Tyr	Ser	Pro	Lys	Gly 210
Asn Trp	Trp	Gly	His 215	Ala	Pro	Tyr	Lys	His 220	Gly	Arg	Pro	Cys	Ser 225
Ala Cys	Pro	Pro	Ser 230	Phe	Gly	Gly	Gly	Cys 235	Arg	Glu	Asn	Leu	Cys 240
Tyr Lys	Glu	Gly	Ser 245	Asp	Arg	Tyr	Tyr	Pro 250	Pro	Arg	Glu	Glu	Glu 255
Thr Asn	Glu	Ile	Glu 260	Arg	Gln	Gln	Ser	Gln 265	Val	His	Asp	Thr	His 270
Val Arg	Thr	Arg	Ser 275	Asp	Asp	Ser	Ser	Arg 280	Asn	Glu	Val	Ile	Ser 285
Ala Gln	Gln	Met	Ser 290	Gln	Ile	Val	Ser	Cys 295	Glu	Val	Arg	Leu	Arg 300
Asp Gln	Cys	Lys	Gly 305	Thr	Thr	Cys	Asn	Arg 310	Tyr	Glu	Cys	Pro	Ala 315
Gly Cys	Leu	Asp	Ser 320	Lys	Ala	Lys	Val	Ile 325	Gly	Ser	Val	His	Tyr 330
Glu Met	Gln	Ser	Ser 335	Ile	Cys	Arg	Ala	Ala 340	Ile	His	Tyr	Gly	Ile 345
Ile Asp	Asn	Asp	Gly 350	Gly	Trp	Val	Asp	Ile 355	Thr	Arg	Gln	Gly	Arg 360
Lys His	Tyr	Phe	Ile 365	Lys	Ser	Asn	Arg	Asn 370	Gly	Ile	Gln	Thr	Ile 375
Gly Lys	Tyr	Gln	Ser 380	Ala	Asn	Ser	Phe	Thr 385	Val	Ser	Lys	Val	Thr 390
Val Gln	Ala	Val	Thr 395	Cys	Glu	Thr	Thr	Val 400	Glu	Gln	Leu	Cys	Pro 405
Phe His	Lys	Pro	Ala 410	Ser	His	Cys	Pro	Arg 415	Val	Tyr	Суз	Pro	Arg 420
Asn Cys	Met	Gln	Ala 425	Asn	Pro	His	Tyr	Ala 430	Arg	Val	Ile	Gly	Thr 435
Arg Val	Tyr	Ser	Asp 440	Leu	Ser	Ser	Ile	Cys 445	Arg	Ala	Ala	Val	His 450
Ala Gly	. Val	Val	Arg 455		His	Gly	Gly	Tyr 460	Val	Asp	Val	Met	Pro 465

```
Val Asp Lys Arg Lys Thr Tyr Ile Ala Ser Phe Gln Asn Gly Ile
                 470
Phe Ser Glu Ser Leu Gln Asn Pro Pro Gly Gly Lys Ala Phe Arg
                 485
Val Phe Ala Val Val
                 500
<210> 364
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 364
ggacagaatt tgggagcaca ctgg 24
<210> 365
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 365
 ccaagagtat actgtcctcg 20
<210> 366
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 366
 agcacagatt ttctctacag ccccc 25
<210> 367
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 367
 aaccactcca gcatgtactg ctgc 24
<210> 368
<211> 50
<212> DNA
<213> Artificial Sequence
```

```
<220>
<223> Synthetic oligonucleotide probe
<400> 368
ccattcaggt gttctggccc tgtatgtaca cattatacac aggtcgtgtg 50
<210> 369
<211> 1685
<212> DNA
<213> Homo sapiens
<400> 369
ccaccgacgg cgcagccgga gccagcagag ccggaaggcg cgccccgggc 100
 agagaaagcc gagcagagct gggtggcgtc tccgggccgc cgctccgacg 150
 ggccagcgcc ctccccatgt ccctgctccc acgccgcgcc cctccggtca 200
 gcatgaggct cctggcggcc gcgctgctcc tgctgctgct ggcgctgtac 250
 accgcgcgtg tggacgggtc caaatgcaag tgctcccgga agggacccaa 300
 gatccgctac agcgacgtga agaagctgga aatgaagcca aagtacccgc 350
 actgcgagga gaagatggtt atcatcacca ccaagagcgt gtccaggtac 400
 cgaggtcagg agcactgcct gcaccccaag ctgcagagca ccaagcgctt 450
 catcaagtgg tacaacgcct ggaacgagaa gcgcagggtc tacgaagaat 500
 agggtgaaaa acctcagaag ggaaaactcc aaaccagttg ggagacttgt 550
 aaaaaaaaaa aaagcctttc tttctcacag gcataagaca caaattatat 650
 attgttatga agcacttttt accaacggtc agtttttaca ttttatagct 700
 gcgtgcgaaa ggcttccaga tgggagaccc atctctcttg tgctccagac 750
 ttcatcacag gctgcttttt atcaaaaagg ggaaaactca tgcctttcct 800
 ttttaaaaaa tgcttttttg tatttgtcca tacgtcacta tacatctgag 850
 ctttataagc gcccgggagg aacaatgagc ttggtggaca catttcattg 900
 cagtgttgct ccattcctag cttgggaagc ttccgcttag aggtcctggc 950
 gcctcggcac agctgccacg ggctctcctg ggcttatggc cggtcacagc 1000
 ctcagtgtga ctccacagtg gcccctgtag ccgggcaagc aggagcaggt 1050
 ctctctgcat ctgttctctg aggaactcaa gtttggttgc cagaaaaatg 1100
```

tgcttcattc ccccctggtt aatttttaca caccctagga aacatttcca 1150

agatectgtg atggegagae aaatgateet taaagaaggt gtggggtett 1200 teecaacetg aggatteetg aaaggtteae aggtteaata tettaatgett 1250 cagaageatg tgaggtteee aacaetgtea geaaaaacet taggagaaaa 1300 ettaaaaata tatgaataea tgegeaatae acagetaeag acaeacatte 1350 tgttgacaag ggaaaacett caaageatgt teetteeet eaceacaaca 1400 gaacatgeag taetaaagea atatattegt gatteeecat gtaattette 1450 aatgttaaae agtgeagtee teettegaaa getaagatga ecatgegeee 1500 teteetetgt acatataeee ttaagaaege eceeteeaea eactgeeeee 1550 cagtatatge egeattgtae tgetgtta tatgetatgt acatgteaga 1600 aaeeattage attgeatgea ggttteatat teettetaag atggaaagta 1650 ataaaatata tttgaaatgt aaaaaaaaa aaaaa 1685

<210> 370

<211> 111

<212> PRT

<213> Homo sapiens

<400> 370

Met Ser Leu Leu Pro Arg Arg Ala Pro Pro Val Ser Met Arg Leu 1 5 10 15

Leu Ala Ala Ala Leu Leu Leu Leu Leu Ala Leu Tyr Thr Ala 20 25 30

Arg Val Asp Gly Ser Lys Cys Lys Cys Ser Arg Lys Gly Pro Lys 35 40 45

Ile Arg Tyr Ser Asp Val Lys Lys Leu Glu Met Lys Pro Lys Tyr
50 55 60

Pro His Cys Glu Glu Lys Met Val Ile Ile Thr Thr Lys Ser Val 65 70 75

Ser Thr Lys Arg Phe Ile Lys Trp Tyr Asn Ala Trp Asn Glu Lys 95 100 105

Arg Arg Val Tyr Glu Glu 110

<210> 371

<211> 22

<212> DNA

<213> Artificial Sequence

<2.20>

```
<223> Synthetic oligonucleotide probe
<400> 371
 cagegeette eccatgteet tg 22
<210> 372
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 372
 tcccaactgg tttggagttt tccc 24
<210> 373
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 373
 ctccggtcag catgaggctc ctggcggccg ctgctcctgc tgctg 45
<210> 374
<211> 3113
<212> DNA
<213> Homo sapiens
<400> 374
 gccccaggga ctgctatggc ttcctttgtt gttcaccccg gtctgcgtca 50
 tgttaaactc caatgtcctc ctgtggttaa ctgctcttgc catcaagttc 100
 acceteattg acagecaage acagtateca gttgteaaca caaattatgg 150
 caaaatccgg ggcctaagaa caccgttacc caatgagatc ttgggtccag 200
 tggagcagta cttaggggtc ccctatgcct cacccccac tggagagagg 250
 cggtttcagc ccccagaacc cccgtcctcc tggactggca tccgaaatac 300
 tactcagttt gctgctgtgt gcccccagca cctggatgag agatccttac 350
 tgcatgacat gctgcccatc tggtttaccg ccaatttgga tactttgatg 400
 acctatgttc aagatcaaaa tgaagactgc ctttacttaa acatctacgt 450
 gcccacggaa gatggagcca acacaaagaa aaacgcagat gatataacga 500
 gtaatgaccg tggtgaagac gaagatattc atgatcagaa cagtaagaag 550
 cccgtcatgg tctatatcca tgggggatct tacatggagg gcaccggcaa 600
 catgattgac ggcagcattt tggcaagcta cggaaacgtc atcgtgatca 650
```

ccattaacta ccgtctggga atactagggt ttttaagtac cggtgaccag 700 gcagcaaaag gcaactatgg gctcctggat cagattcaag cactgcggtg 750 gattgaggag aatgtgggag cctttggcgg ggaccccaag agagtgacca 800 tetttggete gggggetggg geeteetgtg teageetgtt gaeeetgtee 850 cactactcag aaggtctctt ccagaaggcc atcattcaga gcggcaccgc 900 cctgtccagc tgggcagtga actaccagcc ggccaagtac actcggatat 950 tggcagacaa ggtcggctgc aacatgctgg acaccacgga catggtagaa 1000 tgcctgcgga acaagaacta caaggagctc atccagcaga ccatcacccc 1050 ggccacctac cacatagect tegggeeggt gategaegge gaegteatee 1100 cagacgaccc ccagatcctg atggagcaag gcgagttcct caactacgac 1150 atcatgctgg gcgtcaacca aggggaaggc ctgaagttcg tggacggcat 1200 cgtggataac gaggacggtg tgacgcccaa cgactttgac ttctccgtgt 1250 ccaacttcgt ggacaacctt tacggctacc ctgaagggaa agacactttg 1300 cgggagacta tcaagttcat gtacacagac tgggccgata aggaaaaccc 1350 ggagacgcgg cggaaaaccc tggtggctct ctttactgac caccagtggg 1400 tggcccccgc cgtggccgcc gacctgcacg cgcagtacgg ctcccccacc 1450 tacttctatg ccttctatca tcactgccaa agcgaaatga agcccagctg 1500 ggcagattcg gcccatggtg atgaggtccc ctatgtcttc ggcatcccca 1550 tgatcggtcc caccgagetc ttcagttgta acttttccaa gaacgacgtc 1600 atgeteageg cegtggteat gacetactgg acgaactteg ceaaaactgg 1650 tgatccaaat caaccagttc ctcaggatac caagttcatt cacacaaaac 1700 ccaaccgctt tgaagaagtg gcctggtcca agtataatcc caaagaccag 1750 ctctatctgc atattggctt gaaacccaga gtgagagatc actaccgggc 1800 aacgaaagtg gctttctggt tggaactcgt tcctcatttg cacaacttga 1850 acgagatatt ccagtatgtt tcaacaacca caaaggttcc tccaccagac 1900 atgacatcat ttccctatgg cacccggcga tctcccgcca agatatggcc 1950 aaccaccaaa cgcccagcaa tcactcctgc caacaatccc aaacactcta 2000 aggaccetea caaaacaggg cetgaggaca caactgteet cattgaaace 2050 aaacgagatt attccaccga attaagtgtc accattgccg tcggggcgtc 2100

gctcctcttc ctcaacatct tagcttttgc ggcgctgtac tacaaaaagg 2150 acaagaggcg ccatgagact cacaggcgcc ccagtcccca gagaaacacc 2200 acaaatgata tcgctcacat ccagaacgaa gagatcatgt ctctgcagat 2250 gaaqcagctq qaacacqatc acgagtgtga gtcgctgcag gcacacgaca 2300 cactgagget cacetgeecg ceagactaca ceeteacget gegeeggteg 2350 ccagatgaca tcccacttat gacgccaaac accatcacca tgattccaaa 2400 cacactgacg gggatgcagc ctttgcacac ttttaacacc ttcagtggag 2450 gacaaaacag tacaaattta ccccacggac attccaccac tagagtatag 2500 ctttgcccta tttcccttcc tatccctctg ccctacccgc tcagcaacat 2550 agaagagga aggaaagaga gaaggaaaga gagagagaaa gaaagtctcc 2600 agaccaggaa tgtttttgtc ccactgactt aagacaaaaa tgcaaaaagg 2650 cagtcatccc atcccggcag acccttatcg ttggtgtttt ccagtattac 2700 aagatcaact tetgaceetg tgaaatgtga gaagtacaca tttetgttaa 2750 aataactqct ttaaqatctc taccactcca atcaatgttt agtgtgatag 2800 gacatcacca tttcaaggcc ccgggtgttt ccaacgtcat ggaagcagct 2850 gacacttctg aaactcagcc aaggacactt gatatttttt aattacaatg 2900 gaagtttaaa catttctttc tgtgccacac aatggatggc tctccttaag 2950 tgaagaaaga gtcaatgaga ttttgcccag cacatggagc tgtaatccag 3000 agaqaaggaa acgtagaaat ttattattaa aagaatggac tgtgcagcga 3050 aatctqtacq qttctqtqca aaqaqqtqtt ttgccagcct gaactatatt 3100 taagagactt tgt 3113

<210> 375

<211> 816

<212> PRT

<213> Homo sapiens

<400> 375

Met Leu Asn Ser Asn Val Leu Leu Trp Leu Thr Ala Leu Ala Ile 1 5 10 15

Lys Phe Thr Leu Ile Asp Ser Gln Ala Gln Tyr Pro Val Val Asn 20 25 30

Thr Asn Tyr Gly Lys Ile Arg Gly Leu Arg Thr Pro Leu Pro Asn 35 40 45

Glu Ile Leu Gly Pro Val Glu Gln Tyr Leu Gly Val Pro Tyr Ala

				50					55					60
Ser	Pro	Pro	Thr	Gly 65	Glu	Arg	Arg	Phe	Gln 70	Pro	Pro	Glu	Pro	Pro 75
Ser	Ser	Trp	Thr	Gly 80	Ile	Arg	Asn	Thr	Thr 85	Gln	Phe	Ala	Ala	Val 90
Cys	Pro	Gln	His	Leu 95	Asp	Glu	Arg	Ser	Leu 100	Leu	His	Asp	Met	Leu 105
Pro	Ile	Trp	Phe	Thr 110	Ala	Asn	Leu	Asp	Thr 115	Leu	Met	Thr	Tyr	Val 120
Gln	Asp	Gln	Asn	Glu 125	Asp	Cys	Leu	Tyr	Leu 130	Asn	Ile	Tyr	Val	Pro 135
Thr	Glu	Asp	Gly	Ala 140	Asn	Thr	Lys	Lys	Asn 145	Ala	Asp	Asp	Ile	Thr 150
Ser	Asn	Asp	Arg	Gly 155	Glu	Asp	Glu	Asp	Ile 160	His	Asp	Gln	Asn	Ser 165
Lys	Lys	Pro	Val	Met 170	Val	Tyr	Ile	His	Gly 175	Gly	Ser	Tyr	Met	Glu 180
Gly	Thr	Gly	Asn	Met 185	Ile	Asp	Gly	Ser	Ile 190	Leu	Ala	Ser	Tyr	Gly 195
Asn	Val	Ile	Val	Ile 200	Thr	Ile	Asn	Tyr	Arg 205	Leu	Gly	Ile	Leu	Gly 210
Phe	Leu	Ser	Thr	Gly 215	Asp	Gln	Ala	Ala	Lys 220	Gly	Asn	Tyr	Gly	Leu 225
Leu	Asp	Gln	Ile	Gln 230	Ala	Leu	Arg	Trp	Ile 235	Glu	Glu	Asn	Val	Gly 240
Ala	Phe	Gly	Gly	Asp 245	Pro	Lys	Arg	Val	Thr 250	Ile	Phe	Gly	Ser	Gly 255
Ala	Gly	Ala	Ser	Cys 260	Val	Ser	Leu	Leu	Thr 265	Leu	Ser	His	Tyr	Ser 270
Glu	Gly	Leu	Phe	Gln 275	Lys	Ala	Ile	Ile	Gln 280	Ser	Gly	Thr	Ala	Leu 285
Ser	Ser	Trp	Ala	Val 290	Asn	Tyr	Gln	Pro	Ala 295	Lys	Tyr	Thr	Arg	Ile 300
Leu	Ala	Asp	Lys	Val 305	Gly	Cys	Asn	Met	Leu 310	Asp	Thr	Thr	Asp	Met 315
Val	Glu	Cys	Leu	Arg 320		Lys	Asn	Tyr	Lys 325	Glu	Leu	Ile	Gln	Gln 330
Thr	Ile	Thr	Pro	Ala 335		Tyr	His	Ile	Ala 340	Phe	Gly	Pro	Val	Ile 345

Asp	Gly	Asp	Val	Ile 350	Pro	Asp	Asp	Pro	Gln 355	Ile	Leu	Met	Glu	Gln 360
Gly	Glu	Phe	Leu	Asn 365	Tyr	Asp	Ile	Met	Leu 370	Gly	Val	Asn	Gln	Gly 375
Glu	Gly	Leu	Lys	Phe 380	Val	Asp	Gly	Ile	Val 385	Asp	Asn	Glu	Asp	Gly 390
Val	Thr	Pro	Asn	Asp 395	Phe	Asp	Phe	Ser	Val 400	Ser	Asn	Phe	Val	Asp 405
Asn	Leu	Tyr	Gly	Tyr 410	Pro	Glu	Gly	Lys	Asp 415	Thr	Leu	Arg	Glu	Thr 420
Ile	Lys	Phe	Met	Tyr 425	Thr	Asp	Trp	Ala	Asp 430	Lys	Glu	Asn	Pro	Glu 435
Thr	Arg	Arg	Lys	Thr 440	Leu	Val	Ala	Leu	Phe 445	Thr	Asp	His	Gln	Trp 450
Val	Ala	Pro	Ala	Val 455	Ala	Ala	Asp	Leu	His 460	Ala	Gln	Tyr	Gly	Ser 465
Pro	Thr	Tyr	Phe	Tyr 470	Ala	Phe	Tyr	His	His 475	Суз	Gln	Ser	Glu	Met 480
Lys	Pro	Ser	Trp	Ala 485	Asp	Ser	Ala	His	Gly 490	Asp	Glu	Val	Pro	Tyr 495
Val	Phe	Gly	Ile	Pro 500	Met	Ile	Gly	Pro	Thr 505	Glu	Leu	Phe	Ser	Cys 510
Asn	Phe	Ser	Lys	Asn 515	Asp	Val	Met	Leu	Ser 520	Ala	Val	Val	Met	Thr 525
Tyr	Trp	Thr	Asn	Phe 530	Ala	Lys	Thr	Gly	Asp 535	Pro	Asn	Gln	Pro	Val 540
Pro	Gln	Asp	Thr	Lys 545	Phe	Ile	His	Thr	Lys 550	Pro	Asn	Arg	Phe	Glu 555
Glu	Val	Ala	Trp	Ser 560	Lys	Tyr	Asn	Pro	Lys 565	Asp	Gln	Leu	Tyr	Leu 570
His	Ile	Gly	Leu	Lys 575	Pro	Arg	Val	Arg	Asp 580	His	Tyr	Arg	Ala	Thr 585
Lys	Val	Ala	Phe	Trp 590	Leu	Glu	Leu	Val	Pro 595	His	Leu	His	Asn	Leu 600
Asn	Glu	Ile	Phe	Gln 605	Tyr	Val	Ser	Thr	Thr 610	Thr	Lys	Val	Pro	Pro 615
Pro	Asp	Met	Thr	Ser 620	Phe	Pro	Tyr	Gly	Thr 625	Arg	Arg	Ser	Pro	Ala 630
Lys	Ile	Trp	Pro	Thr	Thr	Lys	Arg	Pro	Ala	Ile	Thr	Pro	Ala	Asn

				635					640					645
Asn	Pro	Lys	His	Ser 650	Lys	Asp	Pro	His	Lys 655	Thr	Gly	Pro	Glu	Asp 660
Thr	Thr	Val	Leu	Ile 665	Glu	Thr	Lys	Arg	Asp 670	Tyr	Ser	Thr	Glu	Leu 675
Ser	Val	Thr	Ile	Ala 680	Val	Gly	Ala	Ser	Leu 685	Leu	Phe	Leu	Asn	Ile 690
Leu	Ala	Phe	Ala	Ala 695	Leu	Tyr	Tyr	Lys	Lys 700	Asp	Lys	Arg	Arg	His 705
Glu	Thr	His	Arg	Arg 710	Pro	Ser	Pro	Gln	Arg 715	Asn	Thr	Thr	Asn	Asp 720
Ile	Ala	His	Ile	Gln 725	Asn	Glu	Glu	Ile	Met 730	Ser	Leu	Gln	Met	Lys 735
Gln	Leu	Glu	His	Asp 740	His	Glu	Cys	Glu	Ser 745	Leu	Gln	Ala	His	Asp 750
Thr	Leu	Arg	Leu	Thr 755	Cys	Pro	Pro	Asp	Tyr 760	Thr	Leu	Thr	Leu	Arg 765
Arg	Ser	Pro	Asp	Asp 770	Ile	Pro	Leu	Met	Thr 775	Pro	Asn	Thr	Ile	Thr 780
Met	Ile	Pro	Asn	Thr 785	Leu	Thr	Gly	Met	Gln 790	Pro	Leu	His	Thr	Phe 795
Asn	Thr	Phe	Ser	Gly 800	Gly	Gln	Asn	Ser	Thr 805	Asn	Leu	Pro	His	Gl ₃ 810
His	Ser	Thr	Thr	Arg 815	Val									
<210> 376 <211> 25 <212> DNA <213> Artificial Sequence														
<220> <223> Synthetic oligonucleotide probe														
<400> 376 ggcaagctac ggaaacgtca tcgtg 25														
<210 <211 <212 <213	> 25 > DN.		cial	Seq	uenc	e								
<220 <223		nthe	tic	olig	onuc	leot	ide	prob	e					
<400	> 37	7												

```
aacccccqaq ccaaaaqatg gtcac 25
<210> 378
<211> 47
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 378
 gtaccggtga ccaggcagca aaaggcaact atgggctcct ggatcag 47
<210> 379
<211> 2461
<212> DNA
<213> Homo sapiens
<400> 379
 gggaaagatg gcggcgactc tgggacccct tgggtcgtgg cagcagtggc 50
 ggcgatgttt gtcggctcgg gatgggtcca ggatgttact ccttcttctt 100
 ttgttggggt ctgggcaggg gccacagcaa gtcggggcgg gtcaaacgtt 150
 cgagtacttg aaacgggagc actcgctgtc gaagccctac cagggtgtgg 200
 gcacaggcag ttcctcactg tggaatctga tgggcaatgc catggtgatg 250
 acccagtata tccgccttac cccagatatg caaagtaaac agggtgcctt 300
 gtggaaccgg gtgccatgtt tcctgagaga ctgggagttg caggtgcact 350
 tcaaaatcca tggacaagga aagaagaatc tgcatgggga tggcttggca 400
 atctggtaca caaaggatcg gatgcagcca gggcctgtgt ttggaaacat 450
 ggacaaattt gtggggctgg gagtatttgt agacacctac cccaatgagg 500
 agaagcagca agagcgggta ttcccctaca tctcagccat ggtgaacaac 550
 ggctccctca gctatgatca tgagcgggat gggcggccta cagagctggg 600
 aggetgeaca gecattgtee geaatettea ttaegacace tteetggtga 650
 ttcgctacgt caagaggcat ttgacgataa tgatggatat tgatggcaag 700
 catgagtgga gggactgcat tgaagtgccc ggagtccgcc tgccccgcgg 750
 ctactacttc ggcacctcct ccatcactgg ggatctctca gataatcatg 800
 atgtcatttc cttgaagttg tttgaactga cagtggagag aaccccagaa 850
 gaggaaaagc tccatcgaga tgtgttcttg ccctcagtgg acaatatgaa 900
 gctgcctgag atgacagctc cactgccgcc cctgagtggc ctggccctct 950
```

tcctcatcgt cttttctcc ctggtgtttt ctgtatttgc catagtcatt 1000

ggtatcatac tctacaacaa atggcaggaa cagagccgaa agcgcttcta 1050 ctgagccctc ctgctgccac cacttttgtg actgtcaccc atgaggtatg 1100 gaaggagcag gcactggcct gagcatgcag cctggagagt gttcttgtct 1150 ctagcagctg gttggggact atattctgtc actggagttt tgaatgcagg 1200 gaccccgcat tcccatggtt gtgcatgggg acatctaact ctggtctggg 1250 aagccaccca ccccagggca atgctgctgt gatgtgcctt tccctgcagt 1300 ccttccatgt gggagcagag gtgtgaagag aatttacgtg gttgtgatgc 1350 caaaatcaca gaacagaatt tcatagccca ggctgccgtg ttgtttgact 1400 cagaaqqccc ttctacttca gttttgaatc cacaaagaat taaaaactgg 1450 taacaccaca ggctttctga ccatccattc gttgggtttt gcatttgacc 1500 caaccetetg cetacetgag gagetttett tggaaaccag gatggaaact 1550 tettecetge ettacettee ttteaeteea tteattgtee tetetgtgtg 1600 caacctgage tgggaaagge atttggatge etetetgttg gggeetgggg 1650 ctgcagaaca cacctgcgtt tcactggcct tcattaggtg gccctaggga 1700 qatqqctttc tqctttggat cactgttccc tagcatgggt cttgggtcta 1750 ttggcatgtc catggccttc ccaatcaagt ctcttcaggc cctcagtgaa 1800 gtttggctaa aggttggtgt aaaaatcaag agaagcctgg aagacatcat 1850 ggatgccatg gattagctgt gcaactgacc agctccaggt ttgatcaaac 1900 caaaagcaac atttgtcatg tggtctgacc atgtggagat gtttctggac 1950 ttgctagage etgettaget geatgttttg tagttaegat ttttggaate 2000 ccactttgag tgctgaaagt gtaaggaagc tttcttctta caccttgggc 2050 ttggatattg cccagagaag aaatttggct ttttttttct taatggacaa 2100 gagacagttg ctgttctcat gttccaagtc tgagagcaac agaccctcat 2150 catctgtgcc tggaagagtt cactgtcatt gagcagcaca gcctgagtgc 2200 tggcctctgt caacccttat tccactgcct tatttgacaa ggggttacat 2250 gctgctcacc ttactgccct gggattaaat cagttacagg ccagagtctc 2300 cttggagggc ctggaactct gagtcctcct atgaacctct gtagcctaaa 2350 gccgcgactc tagagtcgac ctgcagtagg gataacaggg taataagctt 2450

ggccgccatg g 2461

<210> 380

<211> 348

<212> PRT

<213> Homo sapiens

<400> 380

Met Ala Ala Thr Leu Gly Pro Leu Gly Ser Trp Gln Gln Trp Arg
1 5 10 15

Arg Cys Leu Ser Ala Arg Asp Gly Ser Arg Met Leu Leu Leu Leu 20 25 30

Leu Leu Gly Ser Gly Gln Gly Pro Gln Gln Val Gly Ala Gly 35 40 45

Gln Thr Phe Glu Tyr Leu Lys Arg Glu His Ser Leu Ser Lys Pro 50 55 60

Tyr Gln Gly Val Gly Thr Gly Ser Ser Ser Leu Trp Asn Leu Met 657075

Gly Asn Ala Met Val Met Thr Gln Tyr Ile Arg Leu Thr Pro Asp 80 85 90

Met Gln Ser Lys Gln Gly Ala Leu Trp Asn Arg Val Pro Cys Phe 95 100 105

Leu Arg Asp Trp Glu Leu Gln Val His Phe Lys Ile His Gly Gln
110 115 120

Gly Lys Lys Asn Leu His Gly Asp Gly Leu Ala Ile Trp Tyr Thr 125 130 135

Lys Asp Arg Met Gln Pro Gly Pro Val Phe Gly Asn Met Asp Lys

Phe Val Gly Leu Gly Val Phe Val Asp Thr Tyr Pro Asn Glu Glu 155

Lys Gln Gln Glu Arg Val Phe Pro Tyr Ile Ser Ala Met Val Asn 170 175 180

Asn Gly Ser Leu Ser Tyr Asp His Glu Arg Asp Gly Arg Pro Thr 185 190 195

Glu Leu Gly Gly Cys Thr Ala Ile Val Arg Asn Leu His Tyr Asp 200 205 210

Thr Phe Leu Val Ile Arg Tyr Val Lys Arg His Leu Thr Ile Met 215 220 225

Met Asp Ile Asp Gly Lys His Glu Trp Arg Asp Cys Ile Glu Val 230 235 240

Pro Gly Val Arg Leu Pro Arg Gly Tyr Tyr Phe Gly Thr Ser Ser 245 250 255

```
Ile Thr Gly Asp Leu Ser Asp Asn His Asp Val Ile Ser Leu Lys
                                     265
Leu Phe Glu Leu Thr Val Glu Arg Thr Pro Glu Glu Glu Lys Leu
                 275
His Arg Asp Val Phe Leu Pro Ser Val Asp Asn Met Lys Leu Pro
                 290
Glu Met Thr Ala Pro Leu Pro Pro Leu Ser Gly Leu Ala Leu Phe
                 305
Leu Ile Val Phe Phe Ser Leu Val Phe Ser Val Phe Ala Ile Val
                 320
                                     325
Ile Gly Ile Ile Leu Tyr Asn Lys Trp Gln Glu Gln Ser Arg Lys
                                                          345
Arg Phe Tyr
<210> 381
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 381
ccttgggtcg tggcagcagt gg 22
<210> 382
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 382
cactetecag getgeatget cagg 24
<210> 383
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 383
gtcaaacgtt cgagtacttg aaacgggagc actcgctgtc gaagc 45
<210> 384
<211> 3150
<212> DNA
<213> Homo sapiens
```

<400> 384 ccgagccggg cgcgcagcga cggagctggg gccggcctgg gaccatgggc 50 gtgagtgcaa tctacggatc agtctctgat ggtgggtcgt taacctcagt 100 ggggactcca agatttccat gaagaaaatc agttgtcttc attcaagaat 150 tggggtctgg ctcagaattc ctgcagctgg tgaaaatctg ttttctagaa 200 gaggtttaat taatgcctgc agtctgacat gttcccgatt tgaggtgaaa 250 ccatgaagag aaaatagaat acttaataat gcttttccgc aaccgcttct 300 tgctgctgct ggccctggct gcgctgctgg cctttgtgag cctcagcctg 350 cagttettee acctgatece ggtgtegaet cetaagaatg gaatgagtag 400 caagagtcga aagagaatca tgcccgaccc tgtgacggag ccccctgtga 450 cagaccccgt ttatgaagct cttttgtact gcaacatccc cagtgtggcc 500 gagcgcagca tggaaggtca tgccccgcat cattttaagc tggtctcagt 550 gcatgtgttc attcgccacg gagacaggta cccactgtat gtcattccca 600 aaacaaagcg accagaaatt gactgcactc tggtggctaa caggaaaccg 650 tatcacccaa aactggaagc tttcattagt cacatgtcaa aaggatccgg 700 agoctottto gaaagoccot tgaactoott goototttac ccaaatcacc 750 cattgtgtga gatgggagag ctcacacaga caggagttgt gcagcatttg 800 cagaacggtc agctgctgag ggatatctat ctaaagaaac acaaactcct 850 gcccaatgat tggtctgcag accagctcta tttagagacc actgggaaaa 900 gccggaccct acaaagtggg ctggccttgc tttatggctt tctcccagat 950 tttgactgga agaagattta tttcaggcac cagccaagtg cgctgttctg 1000 ctctggaagc tgctattgcc cggtaagaaa ccagtatctg gaaaaggagc 1050 agcgtcgtca gtacctccta cgtttgaaaa acagccagct ggagaagacc 1100 tacggggaga tggccaagat cgtggatgtc cccaccaagc agcttagagc 1150 tgccaacccc atagactcca tgctctgcca cttctgccac aatgtcagct 1200 ttccctgtac cagaaatggc tgtgttgaca tggagcactt caaggtaatt 1250 aagacccatc agatcgagga tgaaagggaa agacgggaga agaaattgta 1300 cttcgggtat tctctcctgg gtgcccaccc catcctgaac caaaccatcg 1350 gccggatgca gcgtgccacc gagggcagga aagaagagct ctttgccctc 1400 tactctgctc atgatgtcac tctgtcacca gttctcagtg ccttgggcct 1450

ttcaqaaqcc aggttcccaa ggtttgcagc caggttgatc tttgagcttt 1500 ggcaagacag agaaaagccc agtgaacatt ccgtccggat tctttacaat 1550 ggcgtcgatg tcacattcca cacctctttc tgccaagacc accacaagcg 1600 ttctcccaag cccatgtgcc cgcttgaaaa cttggtccgc tttgtgaaaa 1650 qqqacatqtt tqtagccctg ggtggcagtg gtacaaatta ttatgatgca 1700 tgtcacaggg aaggattcta aaaggtatgc agtacagcag tatagaatcc 1750 atgccaatac agagcatagg gaaaggtcca cttctagttt tgtctgttac 1800 taagggtaga agattattgc tttttaaagg ctaaatattg tttgtgggaa 1850 ccacagatgg ttggggttga acagtaagca cattgctgca atgtggtacg 1900 tgaattgctt ggtacaaaat ggccagttca cagaggaata gaaggtactt 1950 tatcatagcc agacttcgct tagaatgcca gaataatata gttcaagacc 2000 tgaagttgcc aatccaagtt tgcactcttc tggcctgccc catgttacta 2050 tgtgatggaa ccagcacacc tcaaccaaaa ttttttaat cttagacatt 2100 tttaccttgt ccttgttaag aatttcttga agtgatttat ctaaaataaa 2150 ggttggcaaa cttttctgt aaagggccag attgtaaata tttcagactg 2200 tgtggaccaa aaggccacat acagtctctg tcataactac tcaactctgt 2250 ttctgaagca ggaaagccac cacagacagt acataaagga atatgtgtag 2300 ctgggttccc aggccagaca aaacagatgg tgaccagact tggcccctgg 2350 gctgtagttt gctgacccct catctaaaaa ataggctata ctacaattgc 2400 acttccagca ctttgagaac gagttgaata ccaagaatta ttcaatggtt 2450 cctccagtaa cttctgctag aaacacagaa tttggtctgt atctgacact 2500 agaacaaaac ttgagggtaa ataaacattg aattagaatg aatcatagaa 2550 aactgattag aagaatactt gatgtttatg atgattgtgg tacaagatag 2600 ttttaagtat gttctaaata tttgtctgct gtagtctatt tgctgtatat 2650 gctgaaattt ttgtatgcca tttagtattt ttatagttta ggaaaatatt 2700 ttctaagacc agttttagat gactcttatt cctgtagtaa tattcaattt 2750 gctgtacctg cttggtggtt agaaggaggc tagaagatga attcaggcac 2800 tttcttccaa taaaactaat tatggctcat tccctttgac aagctgtaga 2850 actggattca tttttaaacc attttcatca gtttcaaatg gtaaattctg 2900

attgatttt aaatgcgttt ttggaagaac tttgctatta ggtagtttac 2950 agatctttat aaggtgtttt atatattaga agcaattata attacatctg 3000 tgatttctga actaatggtg ctaattcaga gaaatggaaa gtgaaagtga 3050 gattctctgt tgtcatcggc attccaactt tttctctttg tttttgtcca 3100 gtgttgcatt tgaatatgtc tgtttctata aataaattt ttaagaataa 3150

<210> 385

<211> 480

<212> PRT

<213> Homo sapiens

<400> 385

Met Leu Phe Arg Asn Arg Phe Leu Leu Leu Leu Ala Leu Ala Ala 1 5 10 15

Leu Leu Ala Phe Val Ser Leu Ser Leu Gln Phe Phe His Leu Ile 20 25 30

Pro Val Ser Thr Pro Lys Asn Gly Met Ser Ser Lys Ser Arg Lys 35 40 45

Arg Ile Met Pro Asp Pro Val Thr Glu Pro Pro Val Thr Asp Pro 50 55 60

Val Tyr Glu Ala Leu Leu Tyr Cys Asn Ile Pro Ser Val Ala Glu 65 70 75

Arg Ser Met Glu Gly His Ala Pro His His Phe Lys Leu Val Ser 80 85 90

Val His Val Phe Ile Arg His Gly Asp Arg Tyr Pro Leu Tyr Val 95 100 105

Ile Pro Lys Thr Lys Arg Pro Glu Ile Asp Cys Thr Leu Val Ala 110 115 120

Asn Arg Lys Pro Tyr His Pro Lys Leu Glu Ala Phe Ile Ser His 125 130 135

Met Ser Lys Gly Ser Gly Ala Ser Phe Glu Ser Pro Leu Asn Ser 140 145 150

Leu Pro Leu Tyr Pro Asn His Pro Leu Cys Glu Met Gly Glu Leu 155 160 165

Thr Gln Thr Gly Val Val Gln His Leu Gln Asn Gly Gln Leu Leu 170 175 180

Arg Asp Ile Tyr Leu Lys Lys His Lys Leu Leu Pro Asn Asp Trp
185 190 195

Ser Ala Asp Gln Leu Tyr Leu Glu Thr Thr Gly Lys Ser Arg Thr 200 205 210

Leu	Gln	Ser	Gly	Leu 215	Ala	Leu	Leu	Tyr	Gly 220	Phe	Leu	Pro	Asp	Phe 225
Asp	Trp	Lys	Lys	Ile 230	Tyr	Phe	Arg	His	Gln 235	Pro	Ser	Ala	Leu	Phe 240
Cys	Ser	Gly	Ser	Cys 245	Tyr	Cys	Pro	Val	Arg 250	Asn	Gln	Tyr	Leu	Glu 255
Lys	Glu	Gln	Arg	Arg 260	Gln	Tyr	Leu	Leu	Arg 265	Leu	Lys	Asn	Ser	Gln 270
Leu	Glu	Lys	Thr	Tyr 275	Gly	Glu	Met	Ala	Lys 280	Ile	Val	Asp	Val	Pro 285
Thr	Lys	Gln	Leu	Arg 290	Ala	Ala	Asn	Pro	Ile 295	Asp	Ser	Met	Leu	Cys 300
His	Phe	Cys	His	Asn 305	Val	Ser	Phe	Pro	Cys 310	Thr	Arg	Asn	Gly	Cys 315
Val	Asp	Met	Glu	His 320	Phe	Lys	Val	Ile	Lys 325	Thr	His	Gln	Ile	Glu 330
Asp	Glu	Arg	Glu	Arg 335	Arg	Glu	Lys	Lys	Leu 340	Tyr	Phe	Gly	Tyr	Ser 345
Leu	Leu	Gly	Ala	His 350	Pro	Ile	Leu	Asn	Gln 355	Thr	Ile	Gly	Arg	Met 360
Gln	Arg	Ala	Thr	Glu 365	Gly	Arg	Lys	Glu	Glu 370	Leu	Phe	Ala	Leu	Tyr 375
Ser	Ala	His	Asp	Val 380	Thr	Leu	Ser	Pro	Val 385	Leu	Ser	Ala	Leu	Gly 390
Leu	Ser	Glu	Ala	Arg 395	Phe	Pro	Arg	Phe	Ala 400	Ala	Arg	Leu	Ile	Phe 405
Glu	Leu	Trp	Gln	Asp 410	Arg	Glu	Lys	Pro	Ser 415	Glu	His	Ser	Val	Arg 420
Ile	Leu	Tyr	Asn	Gly 425	Val	Asp	Val	Thr	Phe 430	His	Thr	Ser	Phe	Cys 435
Gln	Asp	His	His	Lys 440	Arg	Ser	Pro	Lys	Pro 445	Met	Cys	Pro	Leu	Glu 450
Asn	Leu	Val	Arg	Phe 455	Val	Lys	Arg	Asp	Met 460	Phe	Val	Ala	Leu	Gly 465
Gly	Ser	Gly	Thr	Asn 470	Tyr	Tyr	Asp	Ala	Cys 475	His	Arg	Glu	Gly	Phe 480

<210> 386 <211> 24 <212> DNA <213> Artificial Sequence

```
<220>
<223> Synthetic oligonucleotide probe
<400> 386
ccaagcagct tagagctcca gacc 24
<210> 387
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 387
 ttccctatgc tctgtattgg catgg 25
<210> 388
<211> 50
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 388
 gccacttctg ccacaatgtc agctttccct gtaccagaaa tggctgtgtt 50
<210> 389
<211> 3313
<212> DNA
<213> Homo sapiens
<400> 389
 aaaaaagctc actaaagttt ctattagagc gaatacggta gatttccatc 50
 cccttttgaa gaacagtact gtggagctat ttaagagata aaaacgaaat 100
 atcctttctg ggagttcaag attgtgcagt aattggttag gactctgagc 150
 gccgctgttc accaatcggg gagagaaaag cggagatcct gctcgccttg 200
 cacgcgcctg aagcacaaag cagatagcta ggaatgaacc atccctggga 250
 gtatgtggaa acaacggagg agctctgact tcccaactgt cccattctat 300
 gggcgaagga actgctcctg acttcagtgg ttaagggcag aattgaaaat 350
 aattctggag gaagataaga atgattcctg cgcgactgca ccgggactac 400
 aaagggcttg tcctgctggg aatcctcctg gggactctgt gggagaccgg 450
 atgcacccag atacgctatt cagttccgga agagctggag aaaggctcta 500
 gggtgggcga catctccagg gacctggggc tggagccccg ggagctcgcg 550
 gagcgcggag tccgcatcat ccccagaggt aggacgcagc ttttcgccct 600
```

gaatccgcgc agcggcagct tggtcacggc gggcaggata gaccgggagg 650 agctctgtat gggggccatc aagtgtcaat taaatctaga cattctgatg 700 gaggataaag tgaaaatata tggagtagaa gtagaagtaa gggacattaa 750 cgacaatgcg ccttactttc gtgaaagtga attagaaata aaaattagtg 800 aaaatgcagc cactgagatg cggttccctc taccccacgc ctgggatccg 850 gatatcggga agaactctct gcagagctac gagctcagcc cgaacactca 900 cttctccctc atcgtgcaaa atggagccga cggtagtaag taccccgaat 950 tggtgctgaa acgcgccctg gaccgcgaag aaaaggctgc tcaccacctg 1000 gtocttacgg cotcogacgg gggcgacccg gtgcgcacag gcaccgcgcg 1050 catcogogtg atggttctgg atgcgaacga caacgcacca gcgtttgctc 1100 agecegagta eegegegage gtteeggaga atetggeett gggeaegeag 1150 ctgcttgtag tcaacgctac cgaccctgac gaaggagtca atgcggaagt 1200 gaggtattcc ttccggtatg tggacgacaa ggcggcccaa gttttcaaac 1250 tagattgtaa ttcagggaca atatcaacaa taggggagtt ggaccacgag 1300 gagtcaggat tctaccagat ggaagtgcaa gcaatggata atgcaggata 1350 ttctgcgcga gccaaagtcc tgatcactgt tctggacgtg aacgacaatg 1400 ccccagaagt ggtcctcacc tctctcgcca gctcggttcc cgaaaactct 1450 cccagaggga cattaattgc ccttttaaat gtaaatgacc aagattctga 1500 ggaaaacgga caggtgatct gtttcatcca aggaaatctg ccctttaaat 1550 tagaaaaatc ttacggaaat tactatagtt tagtcacaga catagtcttg 1600 gatagggaac aggttcctag ctacaacatc acagtgaccg ccactgaccg 1650 gggaaccccg cccctatcca cggaaactca tatctcgctg aacgtggcag 1700 acaccaacga caacccgccg gtcttccctc aggcctccta ttccgcttat 1750 atcccagaga acaatcccag aggagtttcc ctcgtctctg tgaccgccca 1800 cgaccccgac tgtgaagaga acgcccagat cacttattcc ctggctgaga 1850 acaccatcca aggggcaagc ctatcgtcct acgtgtccat caactccgac 1900 actggggtac tgtatgcgct gagctccttc gactacgagc agttccgaga 1950 cttgcaagtg aaagtgatgg cgcgggacaa cgggcacccg ccctcagca 2000 gcaacgtgtc gttgagcctg ttcgtgctgg accagaacga caatgcgccc 2050

```
gagatectgt acceegeet ecceaeggae ggtteeaetg gegtggaget 2100
ggctccccgc tccgcagagc ccggctacct ggtgaccaag gtggtggcgg 2150
tggacagaga ctccggccag aacgcctggc tgtcctaccg tctgctcaag 2200
gccagcgagc cgggactctt ctcggtgggt ctgcacacgg gcgaggtgcg 2250
cacggcgcga gccctgctgg acagagacgc gctcaagcag agcctcgtag 2300
tggccgtcca ggaccacggc cagccccctc tctccgccac tgtcacgctc 2350
accgtggccg tggccgacag catcccccaa gtcctggcgg acctcggcag 2400
cctcgagtct ccagctaact ctgaaacctc agacctcact ctgtacctgg 2450
tggtagcggt ggccgcggtc tcctgcgtct tcctggcctt cgtcatcttg 2500
ctgctggcgc tcaggctgcg gcgctggcac aagtcacgcc tgctgcaggc 2550
ttcaggaggc ggcttgacag gagcgccggc gtcgcacttt gtgggcgtgg 2600
acggggtgca ggctttcctg cagacctatt cccacgaggt ttccctcacc 2650
acggactcgc ggaagagtca cctgatcttc ccccagccca actatgcaga 2700
catgctcgtc agccaggaga gctttgaaaa aagcgagccc cttttgctgt 2750
caggtgattc ggtattttct aaagacagtc atgggttaat tgaggtgagt 2800
ttatatcaaa tcttctttct ttttttttt aattgctctg tctcccaagc 2850
tggagtgcag cggtacgatc atagctcact gcggcctcaa actcctaggc 2900
tcaagcaatt atcccacctt tgcctccggt gtaacaggga ctacaggtgc 2950
aagccaccta ctgtctgcct atctatctat ctatctatct atctatctat 3000
ctatctatct atctatctat tactttcttg tacagacggg agtctcacgc 3050
ctgtaatccc agtactttgg gaggccgagg cgggtggatc acctgaggtt 3100
gggagtttga gaccagcctg accaacatgg agaaaccccg tctatactaa 3150
aaaaatacaa aattagccgg gcgtggtggt gcatgtctgt aatcccagct 3200
acttgggagg ctgagtcagg agaattgctt taacctggga ggtggaggtt 3250
gcaatgagct gagattgtgc cattgcactc cagcctgggc aacaagagtg 3300
aaactctatc tca 3313
```

<210> 390

<211> 916

<212> PRT

<213> Homo sapiens

<400> 390

Met Ile Pro Ala Arg Leu His Arg Asp Tyr Lys Gly Leu Val Leu Leu Gly Ile Leu Leu Gly Thr Leu Trp Glu Thr Gly Cys Thr Gln Ile Arg Tyr Ser Val Pro Glu Glu Leu Glu Lys Gly Ser Arg Val Gly Asp Ile Ser Arg Asp Leu Gly Leu Glu Pro Arg Glu Leu Ala Glu Arg Gly Val Arg Ile Ile Pro Arg Gly Arg Thr Gln Leu Phe Ala Leu Asn Pro Arg Ser Gly Ser Leu Val Thr Ala Gly Arg Ile Asp Arg Glu Glu Leu Cys Met Gly Ala Ile Lys Cys Gln Leu Asn Leu Asp Ile Leu Met Glu Asp Lys Val Lys Ile Tyr Gly Val Glu Val Glu Val Arg Asp Ile Asn Asp Asn Ala Pro Tyr Phe Arg Glu Ser Glu Leu Glu Ile Lys Ile Ser Glu Asn Ala Ala Thr Glu Met Arg Phe Pro Leu Pro His Ala Trp Asp Pro Asp Ile Gly Lys Asn Ser Leu Gln Ser Tyr Glu Leu Ser Pro Asn Thr His Phe Ser Leu Ile Val Gln Asn Gly Ala Asp Gly Ser Lys Tyr Pro Glu Leu Val Leu Lys Arg Ala Leu Asp Arg Glu Glu Lys Ala Ala His His Leu Val Leu Thr Ala Ser Asp Gly Gly Asp Pro Val Arg Thr Gly Thr Ala Arg Ile Arg Val Met Val Leu Asp Ala Asn Asp Asn Ala Pro 230 Ala Phe Ala Gln Pro Glu Tyr Arg Ala Ser Val Pro Glu Asn Leu Ala Leu Gly Thr Gln Leu Leu Val Val Asn Ala Thr Asp Pro Asp Glu Gly Val Asn Ala Glu Val Arg Tyr Ser Phe Arg Tyr Val Asp Asp Lys Ala Ala Gln Val Phe Lys Leu Asp Cys Asn Ser Gly Thr

				290					295					300
Ile	Ser	Thr	Ile	Gly 305	Glu	Leu	Asp	His	Glu 310	Glu	Ser	Gly	Phe	Tyr 315
Gln	Met	Glu	Val	Gln 320	Ala	Met	Asp	Asn	Ala 325	Gly	Tyr	Ser	Ala	Arg 330
Ala	Lys	Val	Leu	Ile 335	Thr	Val	Leu	Asp	Val 340	Asn	Asp	Asn	Ala	Pro 345
Glu	Val	Val	Leu	Thr 350	Ser	Leu	Ala	Ser	Ser 355	Val	Pro	Glu	Asn	Ser 360
Pro	Arg	Gly	Thr	Leu 365	Ile	Ala	Leu	Leu	Asn 370	Val	Asn	Asp	Gln	Asp 375
Ser	Glu	Glu	Asn	Gly 380	Gln	Val	Ile	Cys	Phe 385	Ile	Gln	Gly	Asn	Leu 390
Pro	Phe	Lys	Leu	Glu 395	Lys	Ser	Tyr	Gly	Asn 400	Tyr	Tyr	Ser	Leu	Val 405
Thr	Asp	Ile	Val	Leu 410	Asp	Arg	Glu	Gln	Val 415	Pro	Ser	Tyr	Asn	Ile 420
Thr	Val	Thr	Ala	Thr 425	Asp	Arg	Gly	Thr	Pro 430	Pro	Leu	Ser	Thr	Glu 435
Thr	His	Ile	Ser	Leu 440	Asn	Val	Ala	Asp	Thr 445	Asn	Asp	Asn	Pro	Pro 450
Val	Phe	Pro	Gln	Ala 455	Ser	Tyr	Ser	Ala	Tyr 460	Ile	Pro	Glu	Asn	Asn 465
Pro	Arg	Gly	Val	Ser 470	Leu	Val	Ser	Val	Thr 475	Ala	His	Asp	Pro	Asp 480
Cys	Glu	Glu	Asn	Ala 485	Gln	Ile	Thr	Tyr	Ser 490	Leu	Ala	Glu	Asn	Thr 495
Ile	Gln	Gly	Ala	Ser 500	Leu	Ser	Ser	Tyr	Val 505	Ser	Ile	Asn	Ser	Asp 510
Thr	Gly	Val	Leu	Туг 515		Leu	Ser	Ser	Phe 520	Asp	Tyr	Glu	Gln	Phe 525
Arg	Asp	Leu	Gln	Val 530		Val	Met	Ala	Arg 535	Asp	Asn	Gly	His	Pro 540
Pro	Leu	Ser	Ser	Asn 545		Ser	Leu	Ser	Leu 550	Phe	Val	Leu	Asp	Gln 555
Asn	Asp	Asn	Ala	Pro 560		Ile	Leu	Tyr	Pro 565	Ala	Leu	Pro	Thr	Asp 570
Gly	Ser	Thr	Gly	Val 575		Leu	Ala	Pro	Arg 580	Ser	Ala	Glu	Pro	Gly 585

Tyr Leu Val Thr Lys Val Val Ala Val Asp Arg Asp Ser Gly Gln 590 Asn Ala Trp Leu Ser Tyr Arg Leu Leu Lys Ala Ser Glu Pro Gly Leu Phe Ser Val Gly Leu His Thr Gly Glu Val Arg Thr Ala Arg Ala Leu Leu Asp Arg Asp Ala Leu Lys Gln Ser Leu Val Val Ala 635 Val Gln Asp His Gly Gln Pro Pro Leu Ser Ala Thr Val Thr Leu 650 Thr Val Ala Val Ala Asp Ser Ile Pro Gln Val Leu Ala Asp Leu 665 Gly Ser Leu Glu Ser Pro Ala Asn Ser Glu Thr Ser Asp Leu Thr Leu Tyr Leu Val Val Ala Val Ala Ala Val Ser Cys Val Phe Leu Ala Phe Val Ile Leu Leu Ala Leu Arg Leu Arg Arg Trp His Lys Ser Arg Leu Gln Ala Ser Gly Gly Leu Thr Gly Ala Pro Ala Ser His Phe Val Gly Val Asp Gly Val Gln Ala Phe Leu Gln Thr Tyr Ser His Glu Val Ser Leu Thr Thr Asp Ser Arg Lys 755 Ser His Leu Ile Phe Pro Gln Pro Asn Tyr Ala Asp Met Leu Val Ser Gln Glu Ser Phe Glu Lys Ser Glu Pro Leu Leu Ser Gly 795 Asp Ser Val Phe Ser Lys Asp Ser His Gly Leu Ile Glu Val Ser Leu Tyr Gln Ile Phe Phe Leu Phe Phe Phe Asn Cys Ser Val Ser 825 Gln Ala Gly Val Gln Arg Tyr Asp His Ser Ser Leu Arg Pro Gln Thr Pro Arg Leu Lys Gln Leu Ser His Leu Cys Leu Arg Cys Asn Arg Asp Tyr Arg Cys Lys Pro Pro Thr Val Cys Leu Ser Ile Tyr Leu Ser Ile Tyr Leu Ser Ile Tyr Leu Ser Ile Tyr Leu Leu Leu

885 880 875 Ser Cys Thr Asp Gly Ser Leu Thr Pro Val Ile Pro Val Leu Trp 890 895 Glu Ala Glu Ala Gly Gly Ser Pro Glu Val Gly Ser Leu Arg Pro 915 Ala <210> 391 <211> 23 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 391 tccgtctctg tgaaccgccc cac 23 <210> 392 <211> 24 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 392 ctcgggcgca ttgtcgttct ggtc 24 <210> 393 <211> 40 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 393 ccgactgtga aagagaacgc cccagatcca cttgttcccc 40 <210> 394 <211> 999 <212> DNA <213> Homo sapiens <400> 394 cccaggctct agtgcaggag gagaaggagg aggagcagga ggtggagatt 50 cccagttaaa aggctccaga atcgtgtacc aggcagagaa ctgaagtact 100 ggggcctcct ccactgggtc cgaatcagta ggtgaccccg cccctggatt 150

ctggaagacc tcaccatggg acgcccccga cctcgtgcgg ccaagacgtg 200

gatgttcctg ctcttgctgg ggggagcctg ggcaggacac tccagggcac 250 aggaggacaa ggtgctgggg ggtcatgagt gccaacccca ttcgcagcct 300 tggcaggcgg ccttgttcca gggccagcaa ctactctgtg gcggtgtcct 350 tgtaggtggc aactgggtcc ttacagctgc ccactgtaaa aaaccgaaat 400 acacagtacg cctgggagac cacagcctac agaataaaga tggcccagag 450 caagaaatac ctgtggttca gtccatccca cacccctgct acaacagcag 500 cgatgtggag gaccacaacc atgatctgat gcttcttcaa ctgcgtgacc 550 aggeatecet ggggtecaaa gtgaageeea teageetgge agateattge 600 acccagcetg gecagaagtg caccgtetea ggetggggea etgteaceag 650 tccccgagag aattttcctg acactctcaa ctgtgcagaa gtaaaaatct 700 ttccccagaa gaagtgtgag gatgcttacc cggggcagat cacagatggc 750 atggtctgtg caggcagcag caaaggggct gacacgtgcc agggcgattc 800 tggaggcccc ctggtgtgt atggtgcact ccagggcatc acatcctggg 850 gctcagaccc ctgtgggagg tccgacaaac ctggcgtcta taccaacatc 900 tgccgctacc tggactggat caagaagatc ataggcagca agggctgatt 950 ctaggataag cactagatct cccttaataa actcacaact ctctggttc 999

<400> 395

Met Gly Arg Pro Arg Pro Arg Ala Ala Lys Thr Trp Met Phe Leu 1 5 10 15

Leu Leu Gly Gly Ala Trp Ala Gly His Ser Arg Ala Gl
n Glu 20 25 30

Asp Lys Val Leu Gly Gly His Glu Cys Gln Pro His Ser Gln Pro 35 40 45

Trp Gln Ala Ala Leu Phe Gln Gly Gln Gln Leu Leu Cys Gly Gly 50 55 60

Val Leu Val Gly Gly Asn Trp Val Leu Thr Ala Ala His Cys Lys
65 70 75

Lys Pro Lys Tyr Thr Val Arg Leu Gly Asp His Ser Leu Gln Asn 80 85 90

Lys Asp Gly Pro Glu Gln Glu Ile Pro Val Val Gln Ser Ile Pro 95 100 105

<210> 395

<211> 260

<212> PRT

<213> Homo sapiens

```
His Pro Cys Tyr Asn Ser Ser Asp Val Glu Asp His Asn His Asp
Leu Met Leu Leu Gln Leu Arg Asp Gln Ala Ser Leu Gly Ser Lys
Val Lys Pro Ile Ser Leu Ala Asp His Cys Thr Gln Pro Gly Gln
Lys Cys Thr Val Ser Gly Trp Gly Thr Val Thr Ser Pro Arg Glu
                 155
                                     160
Asn Phe Pro Asp Thr Leu Asn Cys Ala Glu Val Lys Ile Phe Pro
                 170
                                     175
Gln Lys Lys Cys Glu Asp Ala Tyr Pro Gly Gln Ile Thr Asp Gly
                                                          195
Met Val Cys Ala Gly Ser Ser Lys Gly Ala Asp Thr Cys Gln Gly
Asp Ser Gly Gly Pro Leu Val Cys Asp Gly Ala Leu Gln Gly Ile
Thr Ser Trp Gly Ser Asp Pro Cys Gly Arg Ser Asp Lys Pro Gly
                 230
Val Tyr Thr Asn Ile Cys Arg Tyr Leu Asp Trp Ile Lys Lys Ile
                 245
Ile Gly Ser Lys Gly
                 260
<210> 396
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 396
cagcctacag aataaagatg gccc 24
<210> 397
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 397
ggtgcaatga tctgccaggc tgat 24
<210> 398
<211> 48
<212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 398
agaaatacct gtggttcagt ccatcccaaa cccctgctac aacagcag 48
<210> 399
<211> 2236
<212> DNA
<213> Homo sapiens
<400> 399
 ggcgccggtg caccgggcgg gctgagcgcc tcctgcggcc cggcctgcgc 50
 geologice geogegeege ceaegeecea acceeggeee gegeeeceta 100
 gececegee gggeegge egggeegg geceaggtga gegeteegee 150
 cgccgcgagg ccccgcccc gcccgcccc ggccggcggg 200
 ggaaccgggc ggattcctcg cgcgtcaaac cacctgatcc cataaaacat 250
 teatectece ggeggeeege getgegageg ceeegeeagt eegegeegee 300
 geogeocteg ceetgtgege ectgegege etgegeacce geggeeegag 350
 cccagccaga gccgggcgga gcggagcgcg ccgagcctcg tcccgcggcc 400
 gggccggggc cgggccgtag cggcggcgcc tggatgcgga cccggccgcg 450
 gggagacggg cgcccgccc gaaacgactt tcagtccccg acgcgccccg 500
 cccaaccct acgatgaaga gggcgtccgc tggagggagc cggctgctgg 550
 catgggtgct gtggctgcag gcctggcagg tggcagcccc atgcccaggt 600
 gcctgcgtat gctacaatga gcccaaggtg acgacaagct gcccccagca 650
 gggcctgcag gctgtgcccg tgggcatccc tgctgccagc cagcgcatct 700
 tectgeacgg caacegeate tegeatgtge cagetgeeag etteegtgee 750
 tgccgcaacc tcaccatcct gtggctgcac tcgaatgtgc tggcccgaat 800
 tgatgcggct gccttcactg gcctggccct cctggagcag ctggacctca 850
 gcgataatgc acageteegg tetgtggace etgecaeatt ecaeggeetg 900
 ggccgcctac acacgctgca cctggaccgc tgcggcctgc aggagctggg 950
 cccggggctg ttccgcggcc tggctgccct gcagtacctc tacctgcagg 1000
 acaacgcgct gcaggcactg cctgatgaca ccttccgcga cctgggcaac 1050
 ctcacacac tcttcctgca cggcaaccgc atctccagcg tgcccgagcg 1100
```

cgccttccgt gggctgcaca gcctcgaccg tctcctactg caccagaacc 1150 gcgtggccca tgtgcacccg catgccttcc gtgaccttgg ccgcctcatg 1200 acactetate tgtttgccaa caatetatea gegetgeeca etgaggeeet 1250 ggccccctg cgtgccctgc agtacctgag gctcaacgac aacccctggg 1300 tgtgtgactg ccgggcacgc ccactctggg cctggctgca gaagttccgc 1350 ggctcctcct ccgaggtgcc ctgcagcctc ccgcaacgcc tggctggccg 1400 tgacctcaaa cgcctagctg ccaatgacct gcagggctgc gctgtggcca 1450 ccggccctta ccatcccatc tggaccggca gggccaccga tgaggagccg 1500 ctqqqqcttc ccaaqtqctq ccaqccagat gccgctgaca aggcctcagt 1550 actggagect ggaagaccag cttcggcagg caatgcgctg aagggacgcg 1600 tgccgcccgg tgacagcccg ccgggcaacg gctctggccc acggcacatc 1650 aatgactcac cctttgggac tctgcctggc tctgctgagc ccccgctcac 1700 tgcagtgcgg cccgagggct ccgagccacc agggttcccc acctcgggcc 1750 ctcgccggag gccaggctgt tcacgcaaga accgcacccg cagccactgc 1800 cgtctgggcc aggcaggcag cgggggtggc gggactggtg actcagaagg 1850 ctcaggtgcc ctacccagcc tcacctgcag cctcaccccc ctgggcctgg 1900 cgctggtgct gtggacagtg cttgggccct gctgaccccc agcggacaca 1950 agagcgtgct cagcagccag gtgtgtgtac atacggggtc tctctccacg 2000 ccgccaagcc agccgggcgg ccgacccgtg gggcaggcca ggccaggtcc 2050 tccctgatgg acgcctgccg cccgccaccc ccatctccac cccatcatgt 2100 ttacagggtt cggcggcagc gtttgttcca gaacgccgcc tcccacccag 2150 atcqcqqtat ataqaqatat qcattttatt ttacttqtqt aaaaatatcg 2200 gacgacgtgg aataaagagc tcttttctta aaaaaa 2236

```
<210> 400
```

<211> 473

<212> PRT

<213> Homo sapiens

<400> 400

Met Lys Arg Ala Ser Ala Gly Gly Ser Arg Leu Leu Ala Trp Val 1 5 10 15

Leu Trp Leu Gln Ala Trp Gln Val Ala Ala Pro Cys Pro Gly Ala 20 25 30

Cys Val Cys Tyr Asn Glu Pro Lys Val Thr Thr Ser Cys Pro Gln Gln Gly Leu Gln Ala Val Pro Val Gly Ile Pro Ala Ala Ser Gln Arg Ile Phe Leu His Gly Asn Arg Ile Ser His Val Pro Ala Ala Ser Phe Arg Ala Cys Arg Asn Leu Thr Ile Leu Trp Leu His Ser Asn Val Leu Ala Arg Ile Asp Ala Ala Ala Phe Thr Gly Leu Ala 100 Leu Leu Glu Gln Leu Asp Leu Ser Asp Asn Ala Gln Leu Arg Ser 110 Val Asp Pro Ala Thr Phe His Gly Leu Gly Arg Leu His Thr Leu His Leu Asp Arg Cys Gly Leu Gln Glu Leu Gly Pro Gly Leu Phe Arg Gly Leu Ala Ala Leu Gln Tyr Leu Tyr Leu Gln Asp Asn Ala Leu Gln Ala Leu Pro Asp Asp Thr Phe Arg Asp Leu Gly Asn Leu Thr His Leu Phe Leu His Gly Asn Arg Ile Ser Ser Val Pro Glu Arg Ala Phe Arg Gly Leu His Ser Leu Asp Arg Leu Leu Leu His Gln Asn Arg Val Ala His Val His Pro His Ala Phe Arg Asp Leu Gly Arg Leu Met Thr Leu Tyr Leu Phe Ala Asn Asn Leu Ser Ala 230 240 Leu Pro Thr Glu Ala Leu Ala Pro Leu Arg Ala Leu Gln Tyr Leu Arg Leu Asn Asp Asn Pro Trp Val Cys Asp Cys Arg Ala Arg Pro Leu Trp Ala Trp Leu Gln Lys Phe Arg Gly Ser Ser Glu Val Pro Cys Ser Leu Pro Gln Arg Leu Ala Gly Arg Asp Leu Lys Arg 300 Leu Ala Ala Asn Asp Leu Gln Gly Cys Ala Val Ala Thr Gly Pro Tyr His Pro Ile Trp Thr Gly Arg Ala Thr Asp Glu Glu Pro Leu

			320					325					330
Gly Le	u Pro	Lys	Cys 335	Cys	Gln	Pro	Asp	Ala 340	Ala	Asp	Lys	Ala	Ser 345
Val Le	u Glu	Pro	Gly 350	Arg	Pro	Ala	Ser	Ala 355	Gly	Asn	Ala	Leu	Lys 360
Gly Ar	g Val	Pro	Pro 365	Gly	Asp	Ser	Pro	Pro 370	Gly	Asn	Gly	Ser	Gly 375
Pro Ar	g His	Ile	Asn 380	Asp	Ser	Pro	Phe	Gly 385	Thr	Leu	Pro	Gly	Ser 390
Ala Gl	u Pro	Pro	Leu 395	Thr	Ala	Val	Arg	Pro 400	Glu	Gly	Ser	Glu	Pro 405
Pro Gl	y Phe	Pro	Thr 410	Ser	Gly	Pro	Arg	Arg 415	Arg	Pro	Gly	Cys	Ser 420
Arg Ly	s Asn	Arg	Thr 425	Arg	Ser	His	Cys	Arg 430	Leu	Gly	Gln	Ala	Gly 435
Ser Gl	y Gly	Gly	Gly 440	Thr	Gly	Asp	Ser	Glu 445	Gly	Ser	Gly	Ala	Leu 450
Pro Se	r Leu	Thr	Cys 455	Ser	Leu	Thr	Pro	Leu 460	Gly	Leu	Ala	Leu	Val 465
Leu Tr	p Thr	Val	Leu 470	Gly	Pro	Cys							
<211> 2 <212> D	<210> 401 <211> 24 <212> DNA <213> Artificial Sequence												
<220> <223> S	ynthe	tic ·	olig	onuc	leot:	ide j	prob	е					
<400> 4		gcag	tacc	tc t	acc :	24							
<210> 4 <211> 2 <212> E <213> A	4 NA	cial	Seq	uenc	e								
<220> <223> S	ynthe	tic	olig	onuc.	leot:	ide j	prob	е					
<400> 4		catt	ggca	gc t	agg :	24							
<210> 4 <211> 4 <212> E <213> A	5 NA	cial	Seq	uenc	e								

```
<220>
<223> Synthetic oligonucleotide probe
<400> 403
aggcactgcc tgatgacacc ttccgcgacc tgggcaacct cacac 45
<210> 404
<211> 2738
<212> DNA
<213> Homo sapiens
<400> 404
 ggaagtccac ggggagcttg gatgccaaag ggaggacggc tgggtcctct 50
ggagaggact actcactggc atatttctga ggtatctgta gaataaccac 100
agcctcagat actggggact ttacagtccc acagaaccgt cctcccagga 150
 agctgaatcc agcaagaaca atggaggcca gcgggaagct catttgcaga 200
 caaaggcaag teettttte ettteteett ttgggettat etetggeggg 250
 cgcggcggaa cctagaagct attctgtggt ggaggaaact gagggcagct 300
 cctttgtcac caatttagca aaggacctgg gtctggagca gagggaattc 350
 tccaggcggg gggttagggt tgtttccaga gggaacaaac tacatttgca 400
 gctcaatcag gagaccgcgg atttgttgct aaatgagaaa ttggaccgtg 450
 aggatctgtg cggtcacaca gagccctgtg tgctacgttt ccaagtgttg 500
 ctagagagtc ccttcgagtt ttttcaagct gagctgcaag taatagacat 550
 aaacgaccac tctccagtat ttctggacaa acaaatgttg gtgaaagtat 600
 cagagagcag tecteetggg actaegttte etetgaagaa tgeegaagae 650
 ttagatgtag gccaaaacaa tattgagaac tatataatca gccccaactc 700
 ctattttcgg gtcctcaccc gcaaacgcag tgatggcagg aaatacccag 750
 agctggtgct ggacaaagcg ctggaccgag aggaagaagc tgagctcagg 800
 ttaacactca cagcactgga tggtggctct ccgcccagat ctggcactgc 850
 tcaggtctac atcgaagtcc tggatgtcaa cgataatgcc cctgaatttg 900
 agcagccttt ctatagagtg cagatctctg aggacagtcc ggtaggcttc 950
 ctggttgtga aggtctctgc cacggatgta gacacaggag tcaacggaga 1000
 gatttcctat tcacttttcc aagcttcaga agagattggc aaaaccttta 1050
 agatcaatcc cttgacagga gaaattgaac taaaaaaaca actcgatttc 1100
```

gaaaaacttc agtcctatga agtcaatatt gaggcaagag atgctggaac 1150

cttttctgga aaatgcaccg ttctgattca agtgatagat gtgaacgacc 1200 atgccccaga agttaccatg tctgcattta ccagcccaat acctgagaac 1250 gcgcctgaaa ctgtggttgc acttttcagt gtttcagatc ttgattcagg 1300 agaaaatggg aaaattagtt gctccattca ggaggatcta cccttcctcc 1350 tgaaatccgc ggaaaacttt tacaccctac taacggagag accactagac 1400 agagaaagca gagcggaata caacatcact atcactgtca ctgacttggg 1450 gacccctatg ctgataacac agctcaatat gaccgtgctg atcgccgatg 1500 tcaatgacaa cgctcccqcc ttcacccaaa cctcctacac cctgttcgtc 1550 cgcgagaaca acagccccgc cctgcacatc cgcagcgtca gcgctacaga 1600 cagagactca ggcaccaacg cccaggtcac ctactcgctg ctgccgcccc 1650 aggacccgca cctgccctc acatccctgg tctccatcaa cgcggacaac 1700 ggccacctgt tcgccctcag gtctctggac tacgaggccc tgcaggggtt 1750 ccagttccgc gtgggcgctt cagaccacgg ctccccggcg ctgagcagcg 1800 aggegetggt gegegtggtg gtgetggaeg ceaacgacaa etegecette 1850 gtgctgtacc cgctgcagaa cggctccgcg ccctgcaccg agctggtgcc 1900 ccgggcggcc gagccgggct acctggtgac caaggtggtg qcgqtggacg 1950 gcgactcggg ccagaacgcc tggctgtcgt accagctgct caaggccacg 2000 gagctcggtc tgttcggcgt gtgggcgcac aatggcgagg tgcgcaccgc 2050 caggetgetg agegagegeg aegeggeeaa geacaggetg gtggtgetgg 2100 tcaaggacaa tggcgagcct ccgcgctcgg ccaccgccac gctgcacgtg 2150 ctcctggtgg acggcttctc ccagccctac ctgcctctcc cggaggcggc 2200 cccgacccag gcccaggccg acttgctcac cgtctacctg gtggtggcgt 2250 tggcctcggt gtcttcgctc ttcctctttt cggtgctcct gttcgtggcg 2300 gtgcggctgt gtaggaggag cagggcggcc tcggtgggtc gctgcttggt 2350 gcccgagggc ccccttccag ggcatcttgt ggacatgagc ggcaccagga 2400 ccctatccca gagctaccag tatgaggtgt gtctggcagg aggctcaggg 2450 accaatgagt tcaagttcct gaagccgatt atccccaact tccctcccca 2500 gtgccctggg aaagaaatac aaggaaattc taccttcccc aataactttg 2550 ggttcaatat tcagtgacca tagttgactt ttacattcca taggtatttt 2600 attttgtggc atttccatgc caatgtttat ttcccccaat ttgtgtgtat 2650 gtaatattgt acggatttac tcttgatttt tctcatgttc tttctccctt 2700 tgttttaaag tgaacattta cctttattcc tggttctt 2738

<210> 405

<211> 798

<212> PRT

<213> Homo sapiens

<400> 405

Met Glu Ala Ser Gly Lys Leu Ile Cys Arg Gln Arg Gln Val Leu
1 5 10 15

Phe Ser Phe Leu Leu Gly Leu Ser Leu Ala Gly Ala Ala Glu 20 25 30

Pro Arg Ser Tyr Ser Val Val Glu Glu Thr Glu Gly Ser Ser Phe 35 40 45

Val Thr Asn Leu Ala Lys Asp Leu Gly Leu Glu Gln Arg Glu Phe 50 55 60

Ser Arg Arg Gly Val Arg Val Val Ser Arg Gly Asn Lys Leu His
65 70 75

Leu Gln Leu Asn Gln Glu Thr Ala Asp Leu Leu Leu Asn Glu Lys
80 85 90

Leu Asp Arg Glu Asp Leu Cys Gly His Thr Glu Pro Cys Val Leu $95 \hspace{1.5cm} 100 \hspace{1.5cm} 105 \hspace{1.5cm}$

Arg Phe Gln Val Leu Leu Glu Ser Pro Phe Glu Phe Phe Gln Ala 110 115 120

Glu Leu Gln Val Ile Asp Ile Asn Asp His Ser Pro Val Phe Leu 125 130 135

Asp Lys Gln Met Leu Val Lys Val Ser Glu Ser Ser Pro Pro Gly 140 145 150

Thr Thr Phe Pro Leu Lys Asn Ala Glu Asp Leu Asp Val Gly Gln
155 160 165

Asn Asn Ile Glu Asn Tyr Ile Ile Ser Pro Asn Ser Tyr Phe Arg 170 175 180

Val Leu Thr Arg Lys Arg Ser Asp Gly Arg Lys Tyr Pro Glu Leu 185 190 195

Val Leu Asp Lys Ala Leu Asp Arg Glu Glu Glu Ala Glu Leu Arg 200 205 210

Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro Arg Ser Gly 215 220 225

Thr Ala Gln Val Tyr Ile Glu Val Leu Asp Val Asn Asp Asn Ala

				230					235					240
Pro	Glu	Phe	Glu	Gln 245	Pro	Phe	Tyr	Arg	Val 250	Gln	Ile	Ser	Glu	Asp 255
Ser	Pro	Val	Gly	Phe 260	Leu	Val	Val	Lys	Val 265	Ser	Ala	Thr	Asp	Val 270
Asp	Thr	Gly	Val	Asn 275	Gly	Glu	Ile	Ser	Tyr 280	Ser	Leu	Phe	Gln	Ala 285
Ser	Glu	Glu	Ile	Gly 290	Lys	Thr	Phe	Lys	Ile 295	Asn	Pro	Leu	Thr	Gly 300
Glu	Ile	Glu	Leu	Lys 305	Lys	Gln	Leu	Asp	Phe 310	Glu	Lys	Leu	Gln	Ser 315
Tyr	Glu	Val	Asn	Ile 320	Glu	Ala	Arg	Asp	Ala 325	Gly	Thr	Phe	Ser	Gly 330
Lys	Суѕ	Thr	Val	Leu 335	Ile	Gln	Val	Ile	Asp 340	Val	Asn	Asp	His	Ala 345
Pro	Glu	Val	Thr	Met 350	Ser	Ala	Phe	Thr	Ser 355	Pro	Ile	Pro	Glu	Asn 360
Ala	Pro	Glu	Thr	Val 365	Val	Ala	Leu	Phe	Ser 370	Val	Ser	Asp	Leu	Asp 375
Ser	Gly	Glu	Asn	Gly 380	Lys	Ile	Ser	Cys	Ser 385	Ile	Gln	Glu	Asp	Leu 390
Pro	Phe	Leu	Leu	Lys 395	Ser	Ala	Glu	Asn	Phe 400	Tyr	Thr	Leu	Leu	Thr 405
Glu	Arg	Pro	Leu	Asp 410	Arg	Glu	Ser	Arg	Ala 415	Glu	Tyr	Asn	Ile	Thr 420
Ile	Thr	Val	Thr	Asp 425	Leu	Gly	Thr	Pro	Met 430	Leu	Ile	Thr	Gln	Leu 435
Asn	Met	Thr	Val	Leu 440	Ile	Ala	Asp	Val	Asn 445	Asp	Asn	Ala	Pro	Ala 450
Phe	Thr	Gln	Thr	Ser 455	Tyr	Thr	Leu	Phe	Val 460	Arg	Glu	Asn	Asn	Ser 465
Pro	Ala	Leu	His	Ile 470	Arg	Ser	Val	Ser	Ala 475	Thr	Asp	Arg	Asp	Ser 480
Gly	Thr	Asn	Ala	Gln 485	Val	Thr	Tyr	Ser	Leu 490	Leu	Pro	Pro	Gln	Asp 495
Pro	His	Leu	Pro	Leu 500	Thr	Ser	Leu	Val	Ser 505	Ile	Asn	Ala	Asp	Asn 510
Gly	His	Leu	Phe	Ala 515	Leu	Arg	Ser	Leu	Asp 520	Tyr	Glu	Ala	Leu	Gln 525

Gly Phe Gln Phe Arg Val Gly Ala Ser Asp His Gly Ser Pro Ala 530 535 Leu Ser Ser Glu Ala Leu Val Arg Val Val Leu Asp Ala Asn Asp Asn Ser Pro Phe Val Leu Tyr Pro Leu Gln Asn Gly Ser Ala Pro Cys Thr Glu Leu Val Pro Arg Ala Ala Glu Pro Gly Tyr Leu Val Thr Lys Val Val Ala Val Asp Gly Asp Ser Gly Gln Asn Ala Trp Leu Ser Tyr Gln Leu Leu Lys Ala Thr Glu Leu Gly Leu Phe Gly Val Trp Ala His Asn Gly Glu Val Arg Thr Ala Arg Leu Leu Ser Glu Arg Asp Ala Ala Lys His Arg Leu Val Val Leu Val Lys 635 Asp Asn Gly Glu Pro Pro Arg Ser Ala Thr Ala Thr Leu His Val Leu Leu Val Asp Gly Phe Ser Gln Pro Tyr Leu Pro Leu Pro Glu Ala Ala Pro Thr Gln Ala Gln Ala Asp Leu Leu Thr Val Tyr Leu 685 Val Val Ala Leu Ala Ser Val Ser Ser Leu Phe Leu Phe Ser Val 695 700 Leu Leu Phe Val Ala Val Arg Leu Cys Arg Arg Ser Arg Ala Ala Ser Val Gly Arg Cys Leu Val Pro Glu Gly Pro Leu Pro Gly His Leu Val Asp Met Ser Gly Thr Arg Thr Leu Ser Gln Ser Tyr Gln Tyr Glu Val Cys Leu Ala Gly Gly Ser Gly Thr Asn Glu Phe Lys Phe Leu Lys Pro Ile Ile Pro Asn Phe Pro Pro Gln Cys Pro Gly Lys Glu Ile Gln Gly Asn Ser Thr Phe Pro Asn Asn Phe Gly Phe 790

Asn Ile Gln

<210> 406

```
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 406
 ctgagaacgc gcctgaaact gtg 23
<210> 407
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 407
 agcgttgtca ttgacatcgg cg 22
<210> 408
<211> 50
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 408
ttagttgctc cattcaggag gatctaccct tcctcctgaa atccqcqqaa 50
<210> 409
<211> 1379
<212> DNA
<213> Homo sapiens
<400> 409
 acceaegegt eegeceaege gteegeceae gegteegee acgegteege 50
 gcgtagccgt gcgccgattq cctctcqqcc tqqqcaatqq tcccqqctqc 100
 cggtcgacga ccgccccgcg tcatgcggct cctcggctgg tggcaagtat 150
 tgctgtgggt gctgggactt cccgtccgcg gcgtggaggt tgcagaggaa 200
 agtggteget tatggteaga ggageageet geteaceete teeaggtggg 250
 ggctgtgtac ctgggtgagg aggagctcct gcatgacccg atgggccagg 300
 acagggcagc agaagaggcc aatgcggtgc tggggctgga cacccaaggc 350
 gatcacatgg tgatgctgtc tgtgattcct ggggaagctg aggacaaagt 400
 gagttcagag cctagcggcg tcacctgtgg tgctggagga gcggaggact 450
 caaggtgcaa cgtccgagag agccttttct ctctggatgg cgctggagca 500
```

cacttccctg acagagaaga ggagtattac acagagccag aagtggcgga 550 atctgacgca gccccgacag aggactccaa taacactgaa agtctgaaat 600 ccccaaaggt gaactgtgag gagagaaaca ttacaggatt agaaaatttc 650 actctgaaaa ttttaaatat gtcacaggac cttatggatt ttctgaaccc 700 aaacggtagt gactgtactc tagtcctgtt ttacaccccg tggtgccgct 750 tttctgccag tttggcccct cactttaact ctctgccccg ggcatttcca 800 caggittggc accgtagctg ttcctaatat tttattattt caaggagcta 900 aaccaatggc cagatttaat catacagatc gaacactgga aacactgaaa 950 atcttcattt ttaatcagac aggtatagaa gccaagaaga atgtggtggt 1000 aactcaagcc gaccaaatag gccctcttcc cagcactttg ataaaaagtg 1050 tggactggtt gcttgtattt tccttattct ttttaattag ttttattatg 1100 tatgctacca ttcgaactga gagtattcgg tggctaattc caggacaaga 1150 gcaggaacat gtggagtagt gatggtctga aagaagttgg aaagaggaac 1200 ttcaatcctt cgtttcagaa attagtgcta cagtttcata cattttctcc 1250 agtgacgtgt tgacttgaaa cttcaggcag attaaaagaa tcatttgttg 1300 aacaactgaa tgtataaaaa aattataaac tggtgtttta actagtattg 1350 caataagcaa atgcaaaaat attcaatag 1379

<210> 410

<211> 360

<212> PRT

<213> Homo sapiens

<400> 410

Met Val Pro Ala Ala Gly Arg Arg Pro Pro Arg Val Met Arg Leu 1 5 10 15

Leu Gly Trp Trp Gln Val Leu Leu Trp Val Leu Gly Leu Pro Val
20 25 30

Arg Gly Val Glu Val Ala Glu Glu Ser Gly Arg Leu Trp Ser Glu
35 40 45

Glu Gln Pro Ala His Pro Leu Gln Val Gly Ala Val Tyr Leu Gly
50 55 60

Glu Glu Glu Leu Leu His Asp Pro Met Gly Gln Asp Arg Ala Ala 65 70 75

Glu Glu Ala Asn Ala Val Leu Gly Leu Asp Thr Gln Gly Asp His

				80					85					90
Met	Val	Met	Leu	Ser 95	Val	Ile	Pro	Gly	Glu 100	Ala	Glu	Asp	Lys	Val 105
Ser	Ser	Glu	Pro	Ser 110	Gly	Val	Thr	Суѕ	Gly 115	Ala	Gly	Gly	Ala	Glu 120
Asp	Ser	Arg	Cys	Asn 125	Val	Arg	Glu	Ser	Leu 130	Phe	Ser	Leu	Asp	Gly 135
Ala	Gly	Ala	His	Phe 140	Pro	Asp	Arg	Glu	Glu 145	Glu	Tyr	Tyr	Thr	Glu 150
Pro	Glu	Val	Ala	Glu 155	Ser	Asp	Ala	Ala	Pro 160	Thr	Glu	Asp	Ser	Asn 165
Asn	Thr	Glu	Ser	Leu 170	Lys	Ser	Pro	Lys	Val 175	Asn	Cys	Glu	Glu	Arg 180
Asn	Ile	Thr	Gly	Leu 185	Glu	Asn	Phe	Thr	Leu 190	Lys	Ile	Leu	Asn	Met 195
Ser	Gln	Asp	Leu	Met 200	Asp	Phe	Leu	Asn	Pro 205	Asn	Gly	Ser	Asp	Cys 210
Thr	Leu	Val	Leu	Phe 215	Tyr	Thr	Pro	Trp	Cys 220	Arg	Phe	Ser	Ala	Ser 225
Leu	Ala	Pro	His	Phe 230	Asn	Ser	Leu	Pro	Arg 235	Ala	Phe	Pro	Ala	Leu 240
His	Phe	Leu	Ala	Leu 245	Asp	Ala	Ser	Gln	His 250	Ser	Ser	Leu	Ser	Thr 255
Arg	Phe	Gly	Thr	Val 260	Ala	Val	Pro	Asn	Ile 265	Leu	Leu	Phe	Gln	Gly 270
Ala	Lys	Pro	Met	Ala 275	Arg	Phe	Asn	His	Thr 280	Asp	Arg	Thr	Leu	Glu 285
Thr	Leu	Lys	Ile	Phe 290	Ile	Phe	Asn	Gln	Thr 295	Gly	Ile	Glu	Ala	Lys 300
Lys	Asn	Val	Val	Val 305	Thr	Gln	Ala	Asp	Gln 310	Ile	Gly	Pro	Leu	Pro 315
Ser	Thr	Leu	Ile	Lys 320	Ser	Val	Asp	Trp	Leu 325	Leu	Val	Phe	Ser	Leu 330
Phe	Phe	Leu	Ile	Ser 335	Phe	Ile	Met	Tyr	Ala 340	Thr	Ile	Arg	Thr	Glu 345
Ser	Ile	Arg	Trp	Leu 350	Ile	Pro	Gly	Gln	Glu	Gln	Glu	His	Val	Glu

<210> 411 <211> 24

```
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 411
 cacagagcca gaagtggcgg aatc 24
<210> 412
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 412
 ccacatgttc ctgctcttgt cctgg 25
<210> 413
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 413
 cggtagtgac tgtactctag tcctgtttta caccccgtgg tgccq 45
<210> 414
<211> 1196
<212> DNA
<213> Homo sapiens
<400> 414
 congretory etecetory eccetogygy togegages acquiretqe 50
 agggccctgg ctcgctgctg ctgctcttcc tcgcctcgca ctgctgcctg 100
 ggctcggcgc gcgggctctt cctctttggc cagcccgact tctcctacaa 150
 gcgcagcaat tgcaagccca tcccggtcaa cctqcaqctg tgccacggca 200
 tcgaatacca gaacatgcgg ctgcccaacc tgctgggcca cgagaccatg 250
 aaggaggtgc tggagcaggc cggcgcttgg atcccgctgg tcatgaagca 300
 gtgccacccg gacaccaaga agttcctgtg ctcgctcttc gcccccgtct 350
 gcctcgatga cctagacgag accatccagc catgccactc gctctgcgtg 400
 caggtgaagg accgctgcgc cccggtcatg tccgccttcg gcttcccctg 450
 gcccgacatg cttgagtgcg accgtttccc ccaggacaac gacctttgca 500
 tececetege tageagegae caecteetge cagecacega ggaageteea 550
```

aaggtatgtg aagcctgcaa aaataaaaat gatgatgaca acgacataat 600 ggaaacgctt tgtaaaaatg attttgcact gaaaataaaa gtgaaggaga 650 taacctacat caaccgagat accaaaatca tcctggagac caagagcaag 700 accatttaca agctgaacgg tgtgtccgaa agggacctga agaaatcggt 750 gctgtggctc aaagacagct tgcagtgcac ctgtgaggag atgaacgaca 800 tcaacgcgcc ctatctggtc atgggacaga aacagggtgg ggagctggtg 850 atcacctcgg tgaagcggtg gcagaagggg cagagaggt tcaagcgcat 900 ctcccgcagc atccgcaagc tgcagtgcta gtcccggcat cctgatggct 950 ccgacaggcc tgctccagag cacggctgac cattctgct ccgggatctc 1000 agctcccgt ccccaagcac actcctagct gctccagtct cagcctggcc 1050 agcttcccc tgcctttgc acgttttca ccccaagcat tcctgagtta 1100 taaggccaca ggagtggata gctgtttca cctaaaggaa aagcccaccc 1150 gaatcttgta gaaatattca aactaataaa atcatgaata ttttaa 1196

<210> 415

<211> 295

<212> PRT

<213> Homo sapiens

<400> 415

Met Leu Gln Gly Pro Gly Ser Leu Leu Leu Phe Leu Ala Ser 1 5 10 15

His Cys Cys Leu Gly Ser Ala Arg Gly Leu Phe Leu Phe Gly Gln $20 \\ 25 \\ 30$

Pro Asp Phe Ser Tyr Lys Arg Ser Asn Cys Lys Pro Ile Pro Val 35 40 45

Asn Leu Gln Leu Cys His Gly Ile Glu Tyr Gln Asn Met Arg Leu 50 55 60

Pro Asn Leu Gly His Glu Thr Met Lys Glu Val Leu Glu Gln 657075

Ala Gly Ala Trp Ile Pro Leu Val Met Lys Gln Cys His Pro Asp 80 85 90

Thr Lys Lys Phe Leu Cys Ser Leu Phe Ala Pro Val Cys Leu Asp 95 100 105

Asp Leu Asp Glu Thr Ile Gln Pro Cys His Ser Leu Cys Val Gln 110 115 120

Val Lys Asp Arg Cys Ala Pro Val Met Ser Ala Phe Gly Phe Pro 125 130 135

```
Trp Pro Asp Met Leu Glu Cys Asp Arg Phe Pro Gln Asp Asn Asp
                 140
 Leu Cys Ile Pro Leu Ala Ser Ser Asp His Leu Leu Pro Ala Thr
 Glu Glu Ala Pro Lys Val Cys Glu Ala Cys Lys Asn Lys Asn Asp
 Asp Asp Asn Asp Ile Met Glu Thr Leu Cys Lys Asn Asp Phe Ala
                 185
 Leu Lys Ile Lys Val Lys Glu Ile Thr Tyr Ile Asn Arg Asp Thr
                 200
 Lys Ile Ile Leu Glu Thr Lys Ser Lys Thr Ile Tyr Lys Leu Asn
                 215
 Gly Val Ser Glu Arg Asp Leu Lys Lys Ser Val Leu Trp Leu Lys
                 230
 Asp Ser Leu Gln Cys Thr Cys Glu Glu Met Asn Asp Ile Asn Ala
                 245
 Pro Tyr Leu Val Met Gly Gln Lys Gln Gly Glu Leu Val Ile
                 260
 Thr Ser Val Lys Arg Trp Gln Lys Gly Gln Arg Glu Phe Lys Arg
                 275
 Ile Ser Arg Ser Ile Arg Lys Leu Gln Cys
                 290
<210> 416
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 416
 cetggctcgc tgctgctgct c 21
<210> 417
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 417
cctcacaggt gcactgcaaq ctqtc 25
<210> 418
<211> 47
<212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 418
ctcttcctct ttggccagcc cgacttctcc tacaagcgca gaattgc 47
<210> 419
<211> 1830
<212> DNA
<213> Homo sapiens
<400> 419
 gtggaggccg ccgacgatgg cggggccgac ggaggccgag acggggttgg 50
 ccgagccccg ggccctgtgc gcgcagcggg gccaccgcac ctacgcgcgc 100
 cgctgggtgt tcctgctcgc gatcagcctg ctcaactgct ccaacgccac 150
 gctgtggctc agctttgcac ctgtggctga cgtcattgct gaggacttgg 200
 teetgteeat ggageagate aactggetgt caetggteta cetegtggta 250
 tocaccocat ttggcgtggc ggccatctgg atcctggact ccqtcgggct 300
 ccgtgcggcg accatcctgg gtgcgtggct gaactttgcc gggagtgtgc 350
 tacgcatggt gccctgcatg gttgttggga cccaaaaccc atttgccttc 400
 ctcatgggtg gccagagcct ctgtgccctt gcccagagcc tggtcatctt 450
 ctctccagcc aagctggctg ccttgtggtt cccagagcac cagcgagcca 500
 cggccaacat gctcgccacc atgtcgaacc ctctgggcgt ccttgtggcc 550
 aatgtgctgt cccctgtgct ggtcaagaag ggtgaggaca ttccgttaat 600
 gctcggtgtc tataccatcc ctgctggcgt cgtctgcctg ctgtccacca 650
 tetgeetgtg ggagagtgtg ceceecacee egeeetetge eggggetgee 700
 agetecacet cagagaagtt cetggatggg eteaagetge ageteatgtg 750
 gaacaaggcc tatgtcatcc tggctgtgtg cttggggggga atgatcggga 800
 tctctgccag cttctcagcc ctcctggagc agatcctctg tgcaagcggc 850
 cactccagtg ggttttccgg cctctgtggc gctctcttca tcacgtttgg 900
gatcctgggg gcactggctc tcggccccta tgtggaccgg accaagcact 950
teactgagge caccaagatt ggeetgtgee tgttetetet ggeetgegtg 1000
ccctttgccc tggtgtccca gctgcaggga cagacccttg ccctggctgc 1050
```

cacctgctcg ctgctcgggc tgtttggctt ctcggtgggc cccgtggcca 1100

tggagttggc ggtcgagtgt tccttccccg tgggggaggg ggctgccaca 1150
ggcatgatct ttgtgctggg gcaggccgag ggaatactca tcatgctggc 1200
aatgacggca ctgactgtgc gacgctcgga gccgtccttg tccacctgcc 1250
agcaggggga ggatccactt gactggacag tgtctctgct gctgatggcc 1300
ggcctgtgca ccttctcag ctgcatcctg gcggtcttct tccacacccc 1350
ataccggcgc ctgcaggccg agtctggga gcccccctcc acccgtaacg 1400
ccgtggggcgg cgcagactca gggccgggtg tggaccgagg gggagcagga 1450
...
agggctgggg tcctggggcc cagcacggcg actccggagt gcacggcgag 1500
gggggcctcg ctagaggacc ccagagggcc cgggagcccc caccagcct 1550
gccaccgagc gactcccgt gcgcaaggcc cagcagccac cgacgcgcc 1600
tcccgccccg gcagactcg aggcaggtc caagcgtca ggtttattga 1650
cccggctggg tctcactcct ccttctcctc cccgtgggtg atcacgtagc 1700
tgagcgcctt gtagtccagg ttgcccgca catcgatgga ggcgaactgg 1750
aacatctggt ccacctgcgg gcggggcga aagggctcct tgcgggctcc 1800
gggagcgaat tacaagggc cacctgaaaa 1830

<210> 420

<211> 560

<212> PRT

<213> Homo sapiens

<400> 420

Met Ala Gly Pro Thr Glu Ala Glu Thr Gly Leu Ala Glu Pro Arg
1 5 10 15

Ala Leu Cys Ala Gln Arg Gly His Arg Thr Tyr Ala Arg Arg Trp
20 25 30

Val Phe Leu Leu Ala Ile Ser Leu Leu Asn Cys Ser Asn Ala Thr
35 40 45

Leu Trp Leu Ser Phe Ala Pro Val Ala Asp Val Ile Ala Glu Asp 50 55 60

Leu Val Leu Ser Met Glu Gln Ile Asn Trp Leu Ser Leu Val Tyr
65 70 75

Leu Val Val Ser Thr Pro Phe Gly Val Ala Ala Ile Trp Ile Leu 80 85 90

Asp Ser Val Gly Leu Arg Ala Ala Thr Ile Leu Gly Ala Trp Leu 95 100 105

Asn Phe Ala Gly Ser Val Leu Arg Met Val Pro Cys Met Val Val

				110					115					120
Gly	Thr	Gln	Asn	Pro 125	Phe	Ala	Phe	Leu	Met 130	Gly	Gly	Gln	Ser	Leu 135
Cys	Ala	Leu	Ala	Gln 140	Ser	Leu	Val	Ile	Phe 145	Ser	Pro	Ala	Lys	Leu 150
Ala	Ala	Leu	Trp	Phe 155	Pro	Glu	His	Gln	Arg 160	Ala	Thr	Ala	Asn	Met 165
Leu	Ala	Thr	Met	Ser 170	Asn	Pro	Leu	Gly	Val 175	Leu	Val	Ala	Asn	Val 180
Leu	Ser	Pro	Val	Leu 185	Val	Lys	Lys	Gly	Glu 190	Asp	Ile	Pro	Leu	Met 195
Leu	Gly	Val	Tyr	Thr 200	Ile	Pro	Ala	Gly	Val 205	Val	Cys	Leu	Leu	Ser 210
Thr	Ile	Cys	Leu	Trp 215	Glu	Ser	Val	Pro	Pro 220	Thr	Pro	Pro	Ser	Ala 225
Gly	Ala	Ala	Ser	Ser 230	Thr	Ser	Glu	Lys	Phe 235	Leu	Asp	Gly	Leu	Lys 240
Leu	Gln	Leu	Met	Trp 245	Asn	Lys	Ala	Tyr	Val 250	Ile	Leu	Ala	Val	Cys 255
Leu	Gly	Gly	Met	Ile 260	Gly	Ile	Ser	Ala	Ser 265	Phe	Ser	Ala	Leu	Leu 270
Glu	Gln	Ile	Leu	Cys 275	Ala	Ser	Gly	His	Ser 280	Ser	Gly	Phe	Ser	Gly 285
Leu	Cys	Gly	Ala	Leu 290	Phe	Ile	Thr	Phe	Gly 295	Ile	Leu	Gly	Ala	Leu 300
Ala	Leu	Gly	Pro	Tyr 305	Val	Asp	Arg	Thr	Lys 310	His	Phe	Thr	Glu	Ala 315
Thr	Lys	Ile	Gly	Leu 320	Cys	Leu	Phe	Ser	Leu 325	Ala	Cys	Val	Pro	Phe 330
Ala	Leu	Val	Ser	Gln 335	Leu	Gln	Gly	Gln	Thr 340	Leu	Ala	Leu	Ala	Ala 345
Thr	Cys	Ser	Leu	Leu 350	Gly	Leu	Phe	Gly	Phe 355	Ser	Val	Gly	Pro	Val 360
Ala	Met	Glu	Leu	Ala 365	Val	Glu	Cys	Ser	Phe 370	Pro	Val	Gly	Glu	Gly 375
Ala	Ala	Thr	Gly	Met 380	Ile	Phe	Val	Leu	Gly 385	Gln	Ala	Glu	Gly	Ile 390
Leu	Ile	Met	Leu	Ala 395	Met	Thr	Ala	Leu	Thr 400	Val	Arg	Arg	Ser	Glu 405

```
Pro Ser Leu Ser Thr Cys Gln Gln Gly Glu Asp Pro Leu Asp Trp
                 410
 Thr Val Ser Leu Leu Met Ala Gly Leu Cys Thr Phe Phe Ser
 Cys Ile Leu Ala Val Phe Phe His Thr Pro Tyr Arg Arg Leu Gln
Ala Glu Ser Gly Glu Pro Pro Ser Thr Arg Asn Ala Val Gly Gly
                 455
Ala Asp Ser Gly Pro Gly Val Asp Arg Gly Gly Ala Gly Arg Ala
                 470
 Gly Val Leu Gly Pro Ser Thr Ala Thr Pro Glu Cys Thr Ala Arg
                 485
                                                          495
 Gly Ala Ser Leu Glu Asp Pro Arg Gly Pro Gly Ser Pro His Pro
Ala Cys His Arg Ala Thr Pro Arg Ala Gln Gly Pro Ala Ala Thr
                 515
                                                          525
Asp Ala Pro Ser Arg Pro Gly Arg Leu Ala Gly Arg Val Gln Ala
 Ser Arg Phe Ile Asp Pro Ala Gly Ser His Ser Ser Phe Ser Ser
                                                          555
 Pro Trp Val Ile Thr
<210> 421
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 421
agcttctcag ccctcctgga gcag 24
<210> 422
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 422
cgggtcaata aacctggacg cttgg 25
<210> 423
<211> 43
<212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 423
tatgtggacc ggaccaagca cttcactgag gccaccaaga ttg 43
<210> 424
<211> 4313
<212> DNA
<213> Homo sapiens
<400> 424
gtcccacatc ctgctcaact gggtcaggtc cctcttagac cagctcttgt 50
ccatcatttg ctgaagtgga ccaactagtt ccccagtagg gggtctcccc 100
tggcaattct tgatcggcgt ttggacatct cagatcgctt ccaatgaaga 150
tggccttgcc ttggggtcct gcttgtttca taatcatcta actatgggac 200
aaggttgtgc cggcagctct gggggaagga gcacggggct gatcaagcca 250
tccaggaaac actggaggac ttgtccagcc ttgaaagaac tctagtggtt 300
tetgaateta geceaettgg eggtaageat gatgeaaett etgeaaette 350
tgctggggct tttggggcca ggtggctact tatttctttt aggggattgt 400
caggaggtga ccactctcac ggtgaaatac caagtgtcag aggaagtgcc 450
atctggtaca gtgatcggga agctgtccca ggaactgggc cgggaggaga 500
ggcggaggca agctggggcc gccttccagg tgttgcagct gcctcaggcg 550
ctccccattc aggtggactc tgaggaaggc ttgctcagca caggcaggcg 600
gctggatcga gagcagctgt gccgacagtg ggatccctgc ctggtttcct 650
ttgatgtgct tgccacaggg gatttggctc tgatccatgt ggagatccaa 700
gtgctggaca tcaatgacca ccagccacgg tttcccaaag gcgagcagga 750
gctggaaatc tctgagagcg cctctctgcg aacccggatc cccctggaca 800
gagetettga eccagacaea ggeeetaaea ecctgeaeae etacaetetg 850
tctcccagtg agcactttgc cttggatgtc attgtgggcc ctgatgagac 900
caaacatgca gaactcatag tggtgaagga gctggacagg gaaatccatt 950
cattttttga tctggtgtta actgcctatg acaatgggaa cccccccaag 1000
tcaggtacca gcttggtcaa ggtcaacgtc ttggactcca atgacaatag 1050
```

ccctgcgttt gctgagagtt cactggcact ggaaatccaa gaagatgctg 1100

cacctggtac gcttctcata aaactgaccg ccacagaccc tgaccaaggc 1150 cccaatgggg aggtggagtt cttcctcagt aagcacatgc ctccagaggt 1200 gctggacacc ttcagtattg atgccaagac aggccaggtc attctgcgtc 1250 gacctctaga ctatgaaaag aaccctgcct acgaggtgga tgttcaggca 1300 agggacctgg gtcccaatcc tatcccagcc cattgcaaag ttctcatcaa 1350 ggttetggat gtcaatgaca acatcccaag catccacgtc acatgggcct 1400 cccagccatc actggtgtca gaagctcttc ccaaggacag ttttattgct 1450 cttgtcatgg cagatgactt ggattcagga cacaatggtt tggtccactg 1500 ctggctgagc caagagctgg gccacttcag gctgaaaaga actaatggca 1550 acacatacat gttgctaacc aatgccacac tggacagaga gcagtggccc 1600 aaatataccc tcactctgtt agcccaagac caaggactcc agcccttatc 1650 agccaagaaa cagctcagca ttcagatcag tgacatcaac gacaatgcac 1700 ctgtgtttga gaaaagcagg tatgaagtct ccacgcggga aaacaactta 1750 ccctctcttc acctcattac catcaaggct catgatgcag acttgggcat 1800 taatggaaaa gtctcatacc gcatccagga ctccccagtt gctcacttag 1850 tagctattga ctccaacaca ggagaggtca ctgctcagag gtcactgaac 1900 tatgaagaga tggccggctt tgagttccag gtgatcgcag aggacagcgg 1950 gcaacccatg cttgcatcca gtgtctctgt gtgggtcagc ctcttggatg 2000 ccaatgataa tgccccagag gtggtccagc ctgtgctcag cgatggaaaa 2050 gccagcctct ccgtgcttgt gaatgcctcc acaggccacc tgctggtgcc 2100 catcgagact cccaatggct tgggcccagc gggcactgac acacctccac 2150 tggccactca cagctcccgg ccattccttt tgacaaccat tgtggcaaga 2200 gatgcagact cgggggcaaa tggagagccc ctctacagca tccgcaatgg 2250 aaatgaagcc cacctcttca tcctcaaccc tcatacgggg cagctgttcg 2300 tcaatgtcac caatgccagc agcctcattg ggagtgagtg ggagctggag 2350 atagtagtag aggaccaggg aagcccccc ttacagaccc gagccctgtt 2400 gagggtcatg tttgtcacca gtgtggacca cctgagggac tcagcccgca 2450 agcctggggc cttgagcatg tcgatgctga cggtgatctg cctggctgta 2500 ctgttgggca tcttcgggtt gatcctggct ttgttcatgt ccatctgccg 2550

gacagaaaag aaggacaaca gggcctacaa ctgtcgggag gccgagtcca 2600 cctaccgcca gcagcccaag aggccccaga aacacattca gaaggcagac 2650 atccacctcg tgcctgtgct caggggtcag gcaggtgagc cttgtgaagt 2700 cgggcagtcc cacaaagatg tggacaagga ggcgatgatg gaagcaggct 2750 gggacccctg cctgcaggcc cccttccacc tcaccccgac cctgtacagg 2800 acgctgcgta atcaaggcaa ccagggagca ccggcggaga gccgagaggt 2850 gctgcaagac acggtcaacc tccttttcaa ccatcccagg cagaggaatg 2900 cctcccggga gaacctgaac cttcccgagc cccagcctgc cacaggccag 2950 ccacgttcca ggcctctgaa ggttgcaggc agccccacag ggaggctggc 3000 tggagaccag ggcagtgagg aagccccaca gaggccacca gcctcctctg 3050 caaccctgag acggcagcga catctcaatg gcaaagtgtc ccctgagaaa 3100 gaatcagggc cccgtcagat cctgcggagc ctggtccggc tgtctgtggc 3150 tgccttcgcc gagcggaacc ccgtggagga gctcactgtg gattctcctc 3200 ctgttcagca aatctcccag ctgctgtcct tgctgcatca gggccaattc 3250 cagcccaaac caaaccaccg aggaaataag tacttggcca agccaggagg 3300 cagcaggagt gcaatcccag acacagatgg cccaagtgca agggctggag 3350 gccagacaga cccagaacag gaggaagggc ctttggatcc tgaagaggac 3400 ctctctgtga agcaactgct agaagaagag ctgtcaagtc tgctggaccc 3450 cagcacaggt ctggccctgg accggctgag cgcccctgac ccggcctgga 3500 tggcgagact ctctttgccc ctcaccacca actaccgtga caatgtgatc 3550 tecceggatg etgeageeac ggaggageeg aggaeettee agaegttegg 3600 caaggcagag gcaccagagc tgagcccaac aggcacgagg ctggccagca 3650 cctttgtctc ggagatgagc tcactgctgg agatgctgct ggaacagcgc 3700 tccagcatgc ccgtggaggc cgcctccgag gcgctgcggc ggctctcggt 3750 ctgcgggagg accctcagtt tagacttggc caccagtgca gcctcaggca 3800 tgaaagtgca aggggaccca ggtggaaaga cggggactga gggcaagagc 3850 agaggcagca gcagcagcag caggtgcctg tgaacatacc tcagacgcct 3900 ctggatccaa gaaccagggg cctgaggatc tgtggacaag agctggtttc 3950 taaaatcttg taactcacta gctagcggcg gcctgagaac tttagggtga 4000

ctgatgctac ccccacagag gaggcaagag ccccaggact aacagctgac 4050 tgaccaaagc agccccttgt aagcagctct gagtcttttg gaggacaggg 4100 acggtttgtg gctgagataa gtgtttcctg gcaaaacata tgtggagcac 4150 aaagggtcag tcctctggca gaacagatgc cacggagtat cacaggcagg 4200 aaagggtggc cttcttgggt agcaggagtc agggggctgt accctggggg 4250 tgccaggaaa tgctctctga cctatcaata aaggaaaagc agtaaaaaaa 4300 aaaaaaaaaa aaa 4313

<210> 425

<211> 1184

<212> PRT

<213> Homo sapiens

<400> 425

Met Met Gln Leu Leu Gln Leu Leu Gly Leu Leu Gly Pro Gly 1 5 10 15

Gly Tyr Leu Phe Leu Leu Gly Asp Cys Gln Glu Val Thr Thr Leu 20 25 30

Thr Val Lys Tyr Gln Val Ser Glu Glu Val Pro Ser Gly Thr Val 35 40 45

Ile Gly Lys Leu Ser Gln Glu Leu Gly Arg Glu Glu Arg Arg Arg 50 55 60

Gln Ala Gly Ala Ala Phe Gln Val Leu Gln Leu Pro Gln Ala Leu
65 70 75

Pro Ile Gln Val Asp Ser Glu Glu Gly Leu Leu Ser Thr Gly Arg 80 85 90

Arg Leu Asp Arg Glu Gln Leu Cys Arg Gln Trp Asp Pro Cys Leu
95 100 105

Val Ser Phe Asp Val Leu Ala Thr Gly Asp Leu Ala Leu Ile His
110 115 120

Val Glu Ile Gln Val Leu Asp Ile Asn Asp His Gln Pro Arg Phe 125 130 135

Pro Lys Gly Glu Glu Leu Glu Ile Ser Glu Ser Ala Ser Leu
140 145 150

Arg Thr Arg Ile Pro Leu Asp Arg Ala Leu Asp Pro Asp Thr Gly

Pro Asn Thr Leu His Thr Tyr Thr Leu Ser Pro Ser Glu His Phe

Ala Leu Asp Val Ile Val Gly Pro Asp Glu Thr Lys His Ala Glu 185 190 195

Leu Ile Val Val Lys Glu Leu Asp Arg Glu Ile His Ser Phe Phe Asp Leu Val Leu Thr Ala Tyr Asp Asn Gly Asn Pro Pro Lys Ser Gly Thr Ser Leu Val Lys Val Asn Val Leu Asp Ser Asn Asp Asn Ser Pro Ala Phe Ala Glu Ser Ser Leu Ala Leu Glu Ile Gln Glu 255 Asp Ala Ala Pro Gly Thr Leu Leu Ile Lys Leu Thr Ala Thr Asp Pro Asp Gln Gly Pro Asn Gly Glu Val Glu Phe Phe Leu Ser Lys 275 280 His Met Pro Pro Glu Val Leu Asp Thr Phe Ser Ile Asp Ala Lys Thr Gly Gln Val Ile Leu Arg Arg Pro Leu Asp Tyr Glu Lys Asn 305 Pro Ala Tyr Glu Val Asp Val Gln Ala Arg Asp Leu Gly Pro Asn 320 Pro Ile Pro Ala His Cys Lys Val Leu Ile Lys Val Leu Asp Val 335 Asn Asp Asn Ile Pro Ser Ile His Val Thr Trp Ala Ser Gln Pro 350 Ser Leu Val Ser Glu Ala Leu Pro Lys Asp Ser Phe Ile Ala Leu 365 Val Met Ala Asp Asp Leu Asp Ser Gly His Asn Gly Leu Val His 380 Cys Trp Leu Ser Gln Glu Leu Gly His Phe Arg Leu Lys Arg Thr 395 405 Asn Gly Asn Thr Tyr Met Leu Leu Thr Asn Ala Thr Leu Asp Arg 410 Glu Gln Trp Pro Lys Tyr Thr Leu Thr Leu Leu Ala Gln Asp Gln 425 Gly Leu Gln Pro Leu Ser Ala Lys Lys Gln Leu Ser Ile Gln Ile 440 Ser Asp Ile Asn Asp Asn Ala Pro Val Phe Glu Lys Ser Arg Tyr 455 Glu Val Ser Thr Arg Glu Asn Asn Leu Pro Ser Leu His Leu Ile Thr Ile Lys Ala His Asp Ala Asp Leu Gly Ile Asn Gly Lys Val

				485					490					495
Ser	Tyr	Arg	Ile	Gln 500	Asp	Ser	Pro	Val	Ala 505	His	Leu	Val	Ala	Ile 510
Asp	Ser	Asn	Thr	Gly 515	Glu	Val	Thr	Ala	Gln 520	Arg	Ser	Leu	Asn	Tyr 525
Glu	Glu	Met	Ala	Gly 530	Phe	Glu	Phe	Gln	Val 535	Ile	Ala	Glu	Asp	Ser 540
Gly	Gln	Pro	Met	Leu 545	Ala	Ser	Ser	Val	Ser 550	Val	Trp	Val	Ser	Leu 555
Leu	Asp	Ala	Asn	Asp 560	Asn	Ala	Pro	Glu	Val 565	Val	Gln	Pro	<u>V</u> al	Leu 570
Ser	Asp	Gly	Lys	Ala 575	Ser	Leu	Ser	Val	Leu 580	Val	Asn	Ala	Ser	Thr 585
Gly	His	Leu	Leu	Val 590	Pro	Ile	Glu	Thr	Pro 595	Asn	Gly	Leu	Gly	Pro 600
Ala	Gly	Thr	Asp	Thr 605	Pro	Pro	Leu	Ala	Thr 610	His	Ser	Ser	Arg	Pro 615
Phe	Leu	Leu	Thr	Thr 620	Ile	Val	Ala	Arg	Asp 625	Ala	Asp	Ser	Gly	Ala 630
Asn	Gly	Glu	Pro	Leu 635	Tyr	Ser	Ile	Arg	Asn 640	Gly	Asn	Glu	Ala	His 645
Leu	Phe	Ile	Leu	Asn 650	Pro	His	Thr	Gly	Gln 655	Leu	Phe	Val	Asn	Val 660
Thr	Asn	Ala	Ser	Ser 665	Leu	Ile	Gly	Ser	Glu 670	Trp	Glu	Leu	Glu	Ile 675
Val	Val	Glu	Asp	Gln 680	Gly	Ser	Pro	Pro	Leu 685	Gln	Thr	Arg	Ala	Leu 690
Leu	Arg	Val	Met	Phe 695	Val	Thr	Ser	Val	Asp 700	His	Leu	Arg	Asp	Ser 705
Ala	Arg	Lys	Pro	Gly 710	Ala	Leu	Ser	Met	Ser 715	Met	Leu	Thr	Val	Ile 720
Cys	Leu	Ala	Val	Leu 725	Leu	Gly	Ile	Phe	Gly 730	Leu	Ile	Leu	Ala	Leu 735
Phe	Met	Ser	Ile	Cys 740	Arg	Thr	Glu	Lys	Lys 745	Asp	Asn	Arg	Ala	Tyr 750
Asn	Cys	Arg	Glu	Ala 755	Glu	Ser	Thr	Tyr	Arg 760	Gln	Gln	Pro	Lys	Arg 765
Pro	Gln	Lys	His	Ile 770	Gln	Lys	Ala	Asp	Ile 775	His	Leu	Val	Pro	Val 780

Leu	Arg	GLY	GIn	A1a 785	G1y	GLu	Pro	Cys	Glu 790	Val	Gly	Gln	Ser	His 795
Lys	Asp	Val	Asp	Lys 800	Glu	Ala	Met	Met	Glu 805	Ala	Gly	Trp	Asp	Pro 810
Cys	Leu	Gln	Ala	Pro 815	Phe	His	Leu	Thr	Pro 820	Thr	Leu	Tyr	Arg	Thr 825
Leu	Arg	Asn	Gln	Gly 830	Asn	Gln	Gly	Ala	Pro 835	Ala	Glu	Ser	Arg	Glu 840
Val	Leu	Gln	Asp	Thr 845	Val	Asn	Leu	Leu	Phe 850	Asn	His	Pro	Arg	Gln 855
Arg	Asn	Ala	Ser	Arg 860	Glu	Asn	Leu	Asn	Leu 865	Pro	Glu	Pro	Gln	Pro 870
Ala	Thr	Gly	Gln	Pro 875	Arg	Ser	Arg	Pro	Leu 880	Lys	Val	Ala	Gly	Ser 885
Pro	Thr	Gly	Arg	Leu 890	Ala	Gly	Asp	Gln	Gly 895	Ser	Glu	Glu	Ala	Pro 900
Gln	Arg	Pro	Pro	Ala 905	Ser	Ser	Ala	Thr	Leu 910	Arg	Arg	Gln	Arg	His 915
Leu	Asn	Gly	Lys	Val 920	Ser	Pro	Glu	Lys	Glu 925	Ser	Gly	Pro	Arg	Gln 930
Ile	Leu	Arg	Ser	Leu 935	Val	Arg	Leu	Ser	Val 940	Ala	Ala	Phe	Ala	Glu 945
Arg	Asn	Pro	Val	Glu 950	Glu	Leu	Thr	Val	Asp 955	Ser	Pro	Pro	Val	Gln 960
Gln	Ile	Ser	Gln	Leu 965	Leu	Ser	Leu	Leu	His 970	Gln	Gly	Gln	Phe	Gln 975
Pro	Lys	Pro	Asn	His 980	Arg	Gly	Asn	Lys	Tyr 985	Leu	Ala	Lys	Pro	Gly 990
Gly	Ser	Arg	Ser	Ala 995	Ile	Pro	Asp		Asp 0001	Gly	Pro	Ser		Arg 1005
Ala	Gly	Gly	Gln 1	Thr .010	Asp	Pro	Glu		Glu 1015	Glu	Gly	Pro	_	Asp 1020
Pro	Glu	Glu	Asp 1	Leu .025	Ser	Val	Lys		Leu 1030	Leu	Glu	Glu		Leu 1035
Ser	Ser	Leu	Leu 1	Asp .040	Pro	Ser	Thr		Leu L045	Ala	Leu	Asp	_	Leu .050
Ser	Ala	Pro	Asp 1	Pro .055	Ala	Trp	Met		Arg L060	Leu	Ser	Leu		Leu .065
Thr	Thr	Asn	Tyr	Arg	Asp	Asn	Val	Ile	Ser	Pro	Asp	Ala	Ala	Ala

1070 1075 1080

Thr Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Ala Glu Ala 1085 1090 1095

Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val 1100 1105 1110

Ser Glu Met Ser Ser Leu Leu Glu Met Leu Glu Glu Gln Arg Ser 1115 1120 1125

Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu Arg Arg Leu Ser 1130 1135 1140

Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr Ser Ala Ala 1145 1150 1155

Ser Gly Met Lys Val Gln Gly Asp Pro Gly Gly Lys Thr Gly Thr 1160 1165 1170

Glu Gly Lys Ser Arg Gly Ser Ser Ser Ser Ser Arg Cys Leu 1175 1180

<210> 426

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 426

gtaagcacat gcctccagag gtgc 24

<210> 427

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 427

gtgacgtgga tgcttgggat gttg 24

<210> 428

<211> 50

<212> DNA

<213> Artificial Sequence

Z220N

<223> Synthetic oligonucleotide probe

<400> 428

tggacacctt cagtattgat gccaagacag gccaggtcat tctgcgtcga 50

<210> 429

<211> 2037

<212> DNA <213> Homo sapiens

<400> 429 cggacgcgtg ggcggacgcg tgggggagag ccgcagtccc ggctgcagca 50 cctgggagaa ggcagaccgt gtgagggggc ctgtggcccc agcgtgctgt 100 ggcctcgggg agtgggaagt ggaggcagga gccttcctta cacttcgcca 150 tgagtttcct catcgactcc agcatcatga ttacctccca gatactattt 200 tttggatttg ggtggctttt cttcatgcgc caattgttta aagactatga 250 gatacgtcag tatgttgtac aggtgatctt ctccgtgacg tttgcatttt 300 cttgcaccat gtttgagctc atcatctttg aaatcttagg agtattgaat 350 agcagctccc gttattttca ctggaaaatg aacctgtgtg taattctgct 400 gatcctggtt ttcatggtgc ctttttacat tggctatttt attgtgagca 450 atatccgact actgcataaa caacgactgc ttttttcctg tctcttatgg 500 ctgaccttta tgtatttctt ctggaaacta ggagatccct ttcccattct 550 cagcccaaaa catgggatct tatccataga acagctcatc agccgggttg 600 gtgtgattgg agtgactctc atggctcttc tttctggatt tggtgctgtc 650 aactgcccat acacttacat gtcttacttc ctcaggaatg tgactgacac 700 ggatattcta gccctggaac ggcgactgct gcaaaccatg gatatgatca 750 taagcaaaaa gaaaaggatg gcaatggcac ggagaacaat gttccagaag 800 ggggaagtgc ataacaaacc atcaggtttc tggggaatga taaaaagtgt 850 taccacttca gcatcaggaa gtgaaaatct tactcttatt caacaggaag 900 tggatgcttt ggaagaatta agcaqqcaqc tttttctqqa aacaqctqat 950 ctatatgcta ccaaggagag aatagaatac tccaaaacct tcaaggggaa 1000 atattttaat tttcttggtt actttttctc tatttactgt gtttggaaaa 1050 ttttcatggc taccatcaat attgtttttg atcgagttgg gaaaacggat 1100 cctgtcacaa gaggcattga gatcactgtg aattatctgg gaatccaatt 1150 tgatgtgaag ttttggtccc aacacatttc cttcattctt gttggaataa 1200 tcatcgtcac atccatcaga ggattgctga tcactcttac caaqttcttt 1250 tatgccatct ctagcagtaa gtcctccaat gtcattgtcc tgctattagc 1300 acagataatg ggcatgtact ttgtctcctc tgtgctgctg atccgaatga 1350

gtatgccttt agaataccgc accataatca ctgaagtcct tggagaactg 1400 cagttcaact tctatcaccg ttggtttgat gtgatcttcc tggtcagcgc 1450 tctctctagc atactcttcc tctatttggc tcacaaacag gcaccagaga 1500 agcaaatggc accttgaact taagcctact acagactgtt agaggccagt 1550 ggtttcaaaa tttagatata agagggggga aaaatggaac cagggcctga 1600 cattttataa acaaacaaaa tgctatggta gcattttca ccttcatagc 1650 atactccttc cccgtcaggt gatactatga ccatgagtag catcagccag 1700 aacatgagag ggagaactaa ctcaagacaa tactcagcag agagcatccc 1750 gtgtggatat gaggctggt tagaggcgga gaggagccaa gaaactaaag 1800 gtgaaaaata cactggaact ctggggcaag acatgtctat ggtagctgag 1850 ccaaacacgt aggatttccg ttttaaggtt cacatggaaa aggttatagc 1900 tttgccttga gattgactca ttaaaatcag agactgtaac aaaaaaaaa 1950 aaaaaaaaaa agggcggccg cgactctaga gtcgacctgc agaagcttgg 2000 ccgccatggc ccaacttgtt tattgcagct tataatg 2037

<210> 430

<211> 455

<212> PRT

<213> Homo sapiens

<400> 430

Met Ser Phe Leu Ile Asp Ser Ser Ile Met Ile Thr Ser Gln Ile 1 5 10 15

Leu Phe Phe Gly Phe Gly Trp Leu Phe Phe Met Arg Gln Leu Phe
20 25 30

Lys Asp Tyr Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser 35 40 45

Val Thr Phe Ala Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe 50 55 60

Glu Ile Leu Gly Val Leu Asn Ser Ser Ser Arg Tyr Phe His Trp
65 70 75

Lys Met Asn Leu Cys Val Ile Leu Leu Ile Leu Val Phe Met Val 80 85 90

Pro Phe Tyr Ile Gly Tyr Phe Ile Val Ser Asn Ile Arg Leu Leu 95 100 105

His Lys Gln Arg Leu Leu Phe Ser Cys Leu Leu Trp Leu Thr Phe 110 115 120

Met	Tyr	Phe	Phe	Trp 125	Lys	Leu	Gly	Asp	Pro 130	Phe	Pro	Ile	Leu	Ser 135
Pro	Lys	His	Gly	Ile 140	Leu	Ser	Ile	Glu	Gln 145	Leu	Ile	Ser	Arg	Val 150
Gly	Val	Ile	Gly	Val 155	Thr	Leu	Met	Ala	Leu 160	Leu	Ser	Gly	Phe	Gly 165
Ala	Val	Asn	Cys	Pro 170	Tyr	Thr	Tyr	Met	Ser 175	Tyr	Phe	Leu	Arg	Asn 180
Val	Thr	Asp	Thr	Asp 185	Ile	Leu	Ala	Leu	Glu 190	Arg	Arg	Leu	Leu	Gln 195
Thr	Met	Asp	Met	Ile 200	Ile	Ser	Lys	Lys	Lys 205	Arg	Met	Ala	Met	Ala 210
Arg	Arg	Thr	Met	Phe 215	Gln	Lys	Gly	Glu	Val 220	His	Asn	Lys	Pro	Ser 225
Gly	Phe	Trp	Gly	Met 230	Ile	Lys	Ser	Val	Thr 235	Thr	Ser	Ala	Ser	Gly 240
Ser	Glu	Asn	Leu	Thr 245	Leu	Ile	Gln	Gln	Glu 250	Val	Asp	Ala	Leu	Glu 255
Glu	Leu	Ser	Arg	Gln 260	Leu	Phe	Leu	Glu	Thr 265	Ala	Asp	Leu	Tyr	Ala 270
Thr	Lys	Glu	Arg	Ile 275	Glu	Tyr	Ser	Lys	Thr 280	Phe	Lys	Gly	Lys	Tyr 285
Phe	Asn	Phe	Leu	Gly 290	Tyr	Phe	Phe	Ser	Ile 295	Tyr	Суз	Val	Trp	Lys 300
Ile	Phe	Met	Ala	Thr 305	Ile	Asn	Ile	Val	Phe 310	Asp	Arg	Val	Gly	Lys 315
Thr	Asp	Pro	Val	Thr 320	Arg	Gly	Ile	Glu	Ile 325	Thr	Val	Asn	Tyr	Leu 330
Gly	Ile	Gln	Phe	Asp 335	Val	Lys	Phe	Trp	Ser 340	Gln	His	Ile	Ser	Phe 345
Ile	Leu	Val	Gly	Ile 350	Ile	Ile	Val	Thr	Ser 355	Ile	Arg	Gly	Leu	Leu 360
Ile	Thr	Leu	Thr	Lys 365	Phe	Phe	Tyr	Ala	Ile 370	Ser	Ser	Ser	Lys	Ser 375
Ser	Asn	Val	Ile	Val 380	Leu	Leu	Leu	Ala	Gln 385	Ile	Met	Gly	Met	Tyr 390
Phe	Val	Ser	Ser	Val 395	Leu	Leu	Ile	Arg	Met 400	Ser	Met	Pro	Leu	Glu 405
Tyr	Arg	Thr	Ile	Ile	Thr	Glu	Val	Leu	Gly	Glu	Leu	Gln	Phe	Asn

410 415 420

Phe Tyr His Arg Trp Phe Asp Val Ile Phe Leu Val Ser Ala Leu
425
430
435

Ser Ser Ile Leu Phe Leu Tyr Leu Ala His Lys Gln Ala Pro Glu 440 445 450

Lys Gln Met Ala Pro 455

<210> 431

<211> 407

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 78, 81, 113, 157, 224, 297

<223> unknown base

<400> 431

catgggaagt ggagccggag ccttccttac actcgccatg agtttcctca 50

tcgactccag catcatgatt acctcccnga nactatttt tggatttggg 100

tggcttttct tcngcgccaa tgtttaaaga ctatgagata cgtcagtatg 150

ttgtacnggt gatcttctcc gtgacgtttg ccatttcttg caccatgttt 200

gagctcatca tctttgaaat cttnggagta ttgaatagca gctcccgtta 250

ttttcactgg aaaatgaacc tgtgtgtaat tctgctgatc ctggttntca 300

tggtgccttt ttacattggc tattttattg tgagcaatat ccgactactg 350

cataaacaac gactgctttt ttcctgtctc ttatggctga cctttatgta 400

tttccag 407

<210> 432

<211> 457

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 31, 66, 81-82, 84, 122, 184, 187, 232, 241, 400, 424, 427, 434

<223> unknown base

<400> 432

gtgttgccct tggggagggg aaggggagcc nggccctttc ctaaaatttg 50

gccaagggtt totttnttga attccgggtt nngnatacct tcccagaaaa 100

tattttttgg atttggggta gnttttttc atgcgccaat tgtttaaaga 150

ctatgagata cgtcagtatg ttgtacaggt gatnttntcc gtgacgtttg 200

```
cattttcttg caccatgttt gagctcatca tntttgaaat nttaggagta 250
 ttgaatagca gctcccgtta ttttcactgg aaaatgaacc tgtgtgtaat 300
 tctgctgatc ctggttttca tggtgccttt ttacattggc tattttattg 350
 tgagcaatat ccgactactg cataaacaac gactgctttt ttcctgtctn 400
 ttatggctga cctttatgta tttnttntgg aaantaggag atccctttcc 450
 cattctc 457
<210> 433
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 433
 aagtggagcc ggagccttcc 20
<210> 434
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 434
 tcgttgttta tgcagtagtc gg 22
<210> 435
<211> 41
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 435
 attgtttaaa gactatgaga tacgtcagta tgttgtacag g 41
<210> 436
<211> 3951
<212> DNA
<213> Homo sapiens
<400> 436
 ctcgcgcagg gatcgtccca tggccggggc tcggagccgc gacccttggg 50
 gggcctccgg gatttgctac ctttttggct ccctgctcgt cgaactgctc 100
 ttctcacggg ctgtcgcctt caatctggac gtgatgggtg ccttgcgcaa 150
 ggagggcgag ccaggcagcc tcttcggctt ctctgtggcc ctgcaccggc 200
```

agttgcagcc ccgaccccag agctggctgc tggtgggtgc tccccaggcc 250 ctggctcttc ctgggcagca ggcgaatcgc actggaggcc tcttcgcttg 300 cccgttgagc ctggaggaga ctgactgcta cagagtggac atcgaccagg 350 gagctgatat gcaaaaggaa agcaaggaga accagtggtt gggagtcagt 400 gttcggagcc aggggcctgg gggcaagatt gttacctgtg cacaccgata 450 tgaggcaagg cagcgagtgg accagatcct ggagacgcgg gatatgattg 500 gtcgctgctt tgtgctcagc caggacctgg ccatccggga tgagttggat 550 ggtggggaat ggaagttctg tgagggacgc ccccaaggcc atgaacaatt 600 tgggttctgc cagcagggca cagctgccgc cttctcccct gatagccact 650 acctectett tggggcccca ggaacctata attggaaggg caeggecagg 700 gtggagctct gtgcacaggg ctcagcggac ctggcacacc tggacgacgg 750 tccctacgag gcgggggag agaaggagca ggacccccgc ctcatcccgg 800 tccctgccaa cagctacttt ggcttctcta ttgactcggg gaaaggtctg 850 gtgcgtgcag aagagctgag ctttgtggct ggagcccccc gcgccaacca 900 caagggtgct gtggtcatcc tgcgcaagga cagcgccagt cgcctggtgc 950 ccgaggttat gctgtctggg gagcgcctga cctccggctt tggctactca 1000 ctggctgtgg ctgacctcaa cagtgatggc tggccagacc tgatagtggg 1050 tgccccctac ttctttgagc gccaagaaga gctggggggt gctgtgtatg 1100 tgtacttgaa ccaggggggt cactgggctg ggatctcccc tctccggctc 1150 tgcggctccc ctgactccat gttcgggatc agcctggctg tcctggggga 1200 cctcaaccaa gatggctttc cagatattgc agtgggtgcc ccctttgatg 1250 gtgatgggaa agtcttcatc taccatggga gcagcctggg ggttgtcgcc 1300 aaaccttcac aggtgctgga gggcgaggct gtgggcatca agagcttcgg 1350 ctactccctg tcaggcagct tggatatgga tgggaaccaa taccctgacc 1400 tgctggtggg ctccctggct gacaccgcag tgctcttcag ggccagaccc 1450 atcctccatg tctcccatga ggtctctatt gctccacgaa gcatcgacct 1500 ggagcagccc aactgtgctg gcggccactc ggtctgtgtg gacctaaqgg 1550 tctgtttcag ctacattgca gtccccagca gctatagccc tactgtggcc 1600 ctggactatg tgttagatgc ggacacagac cggaggctcc ggggccaggt 1650

teccegtgtg aegtteetga geegtaacet ggaagaacee aageaceagg 1700 cctcgggcac cgtgtggctg aagcaccagc atgaccgagt ctgtggagac 1750 gccatgttcc agctccagga aaatgtcaaa gacaagcttc gggccattgt 1800 agtgaccttg tcctacagtc tccagacccc tcggctccgg cgacaggctc 1850 ctggccaggg gctgcctcca gtggccccca tcctcaatgc ccaccagccc 1900 agcacccagc gggcagagat ccacttcctg aagcaaggct gtggtgaaga 1950 caagatctgc cagagcaatc tgcagctggt ccacgcccgc ttctgtaccc 2000 gggtcagcga cacggaattc caacctctgc ccatggatgt ggatggaaca 2050 acagccctgt ttgcactgag tgggcagcca gtcattggcc tggagctgat 2100 ggtcaccaac ctgccatcgg acccagccca gccccaggct gatggggatg 2150 atgcccatga agcccagctc ctggtcatgc ttcctgactc actgcactac 2200 tcaggggtcc gggccctgga ccctgcggag aagccactct gcctgtccaa 2250 tgagaatgcc tcccatgttg agtgtgagct ggggaacccc atgaagagag 2300 gtgcccaggt caccttctac ctcatcctta gcacctccgg gatcagcatt 2350 gagaccacgg aactggaggt agagctgctg ttggccacga tcagtgagca 2400 ggagctgcat ccagtctctg cacgagcccg tgtcttcatt gagctgccac 2450 tgtccattgc aggaatggcc attccccagc aactcttctt ctctggtgtg 2500 gtgaggggcg agagagccat gcagtctgag cgggatgtgg gcagcaaggt 2550 caagtatgag gtcacggttt ccaaccaagg ccagtcgctc agaaccctgg 2600 gctctgcctt cctcaacatc atgtggcctc atgagattgc caatgggaag 2650 tggttgctgt acccaatgca ggttgagctg gagggcgggc aggggcctgg 2700 gcagaaaggg ctttgctctc ccaggcccaa catcctccac ctggatgtgg 2750 acagtaggga taggaggcgg cgggagctgg agccacctga gcagcaggag 2800 cctggtgagc ggcaggagcc cagcatgtcc tggtggccag tgtcctctgc 2850 tgagaagaag aaaaacatca ccctggactg cgcccggggc acggccaact 2900 gtgtggtgtt cagctgccca ctctacagct ttgaccgcgc ggctgtgctg 2950 catgtctggg gccgtctctg gaacagcacc tttctggagg agtactcagc 3000 tgtgaagtcc ctggaagtga ttgtccgggc caacatcaca gtgaagtcct 3050 ccataaagaa cttgatgctc cgagatgcct ccacagtgat cccagtgatg 3100

gtatacttgg accccatggc tgtggtggca gaaggagtgc cctggtgggt 3150 catcctcctg gctgtactgg ctgggctgct ggtgctaqca ctgctggtgc 3200 tgctcctgtg gaagatggga ttcttcaaac gggcgaagca ccccgaggcc 3250 accgtgcccc agtaccatgc ggtgaagatt cctcgggaag accgacagca 3300 gttcaaggag gagaagacgg gcaccatcct gaggaacaac tggggcagcc 3350 cccggcggga gggcccggat gcacacccca tcctggctgc tgacgggcat 3400 cccgagctgg gccccgatgg gcatccaggg ccaggcaccg cctaggttcc 3450 catgtcccag cctggcctgt ggctgccctc catcccttcc ccagagatgg 3500 ctccttggga tgaagagggt agagtgggct gctggtgtcg catcaagatt 3550 tggcaggatc ggcttcctca ggggcacaga cctctcccac ccacaagaac 3600 tecteceace caactteece ttagagtget gtgagatgag agtgggtaaa 3650 tcagggacag ggccatgggg tagggtgaga agggcagggg tgtcctgatg 3700 caaaggtggg gagaagggat cctaatccct tcctctccca ttcaccctgt 3750 gtaacaggac cccaaggacc tgcctccccg gaagtgcctt aacctagagg 3800 gtcggggagg aggttgtgtc actgactcag gctgctcctt ctctagtttc 3850 ccctctcatc tgaccttagt ttgctgccat cagtctagtg gtttcgtggt 3900 a 3951

<210> 437

<211> 1141

<212> PRT

<213> Homo sapiens

<400> 437

Met Ala Gly Ala Arg Ser Arg Asp Pro Trp Gly Ala Ser Gly Ile 1 5 10 15

Cys Tyr Leu Phe Gly Ser Leu Leu Val Glu Leu Leu Phe Ser Arg 20 25 30

Ala Val Ala Phe Asn Leu Asp Val Met Gly Ala Leu Arg Lys Glu 35 40 45

Gly Glu Pro Gly Ser Leu Phe Gly Phe Ser Val Ala Leu His Arg
50 55 60

Gln Leu Gln Pro Arg Pro Gln Ser Trp Leu Leu Val Gly Ala Pro 65 70 75

Gln Ala Leu Ala Leu Pro Gly Gln Gln Ala Asn Arg Thr Gly Gly

				80					85					90
Leu	Phe	Ala	Cys	Pro 95	Leu	Ser	Leu	Glu	Glu 100	Thr	Asp	Cys	Tyr	Arc 105
Val	Asp	Ile	Asp	Gln 110	Gly	Ala	Asp	Met	Gln 115	Lys	Glu	Ser	Lys	Glu 120
Asn	Gln	Trp	Leu	Gly 125		Ser	Val	Arg	Ser 130	Gln	Gly	Pro	Gly	Gly 135

Lys Ile Val Thr Cys Ala His Arg Tyr Glu Ala Arg Gln Arg Val 140 145 150

Asp Gln Ile Leu Glu Thr Arg Asp Met Ile Gly Arg Cys Phe Val 155 160 165

Leu Ser Gln Asp Leu Ala Ile Arg Asp Glu Leu Asp Gly Glu 170 175 180

Trp Lys Phe Cys Glu Gly Arg Pro Gln Gly His Glu Gln Phe Gly 185 190 195

Phe Cys Gln Gln Gly Thr Ala Ala Ala Phe Ser Pro Asp Ser His 200 205 210

Tyr Leu Leu Phe Gly Ala Pro Gly Thr Tyr Asn Trp Lys Gly Thr 215 220 225

Ala Arg Val Glu Leu Cys Ala Gln Gly Ser Ala Asp Leu Ala His 230 235 240

Leu Asp Asp Gly Pro Tyr Glu Ala Gly Gly Glu Lys Glu Gln Asp 245 250 255

Pro Arg Leu Ile Pro Val Pro Ala Asn Ser Tyr Phe Gly Phe Ser 260 265 270

Ile Asp Ser Gly Lys Gly Leu Val Arg Ala Glu Glu Leu Ser Phe 275 280 285

Val Ala Gly Ala Pro Arg Ala Asn His Lys Gly Ala Val Ile 290 295 300

Leu Arg Lys Asp Ser Ala Ser Arg Leu Val Pro Glu Val Met Leu 305 310 315

Ser Gly Glu Arg Leu Thr Ser Gly Phe Gly Tyr Ser Leu Ala Val 320 325 330

Ala Asp Leu Asn Ser Asp Gly Trp Pro Asp Leu Ile Val Gly Ala 335 340 345

Pro Tyr Phe Phe Glu Arg Gln Glu Glu Leu Gly Gly Ala Val Tyr 350 355 360

Val Tyr Leu Asn Gln Gly Gly His Trp Ala Gly Ile Ser Pro Leu 365 370 375

Arg Leu Cys Gly Ser Pro Asp Ser Met Phe Gly Ile Ser Leu Ala Val Leu Gly Asp Leu Asn Gln Asp Gly Phe Pro Asp Ile Ala Val Gly Ala Pro Phe Asp Gly Asp Gly Lys Val Phe Ile Tyr His Gly Ser Ser Leu Gly Val Val Ala Lys Pro Ser Gln Val Leu Glu Gly 425 Glu Ala Val Gly Ile Lys Ser Phe Gly Tyr Ser Leu Ser Gly Ser Leu Asp Met Asp Gly Asn Gln Tyr Pro Asp Leu Leu Val Gly Ser 455 Leu Ala Asp Thr Ala Val Leu Phe Arg Ala Arg Pro Ile Leu His 470 Val Ser His Glu Val Ser Ile Ala Pro Arg Ser Ile Asp Leu Glu 485 495 Gln Pro Asn Cys Ala Gly Gly His Ser Val Cys Val Asp Leu Arg Val Cys Phe Ser Tyr Ile Ala Val Pro Ser Ser Tyr Ser Pro Thr 515 Val Ala Leu Asp Tyr Val Leu Asp Ala Asp Thr Asp Arg Arg Leu 530 Arg Gly Gln Val Pro Arg Val Thr Phe Leu Ser Arg Asn Leu Glu 545 Glu Pro Lys His Gln Ala Ser Gly Thr Val Trp Leu Lys His Gln His Asp Arg Val Cys Gly Asp Ala Met Phe Gln Leu Gln Glu Asn 575 Val Lys Asp Lys Leu Arg Ala Ile Val Val Thr Leu Ser Tyr Ser 590 Leu Gln Thr Pro Arg Leu Arg Gln Ala Pro Gly Gln Gly Leu 605 Pro Pro Val Ala Pro Ile Leu Asn Ala His Gln Pro Ser Thr Gln Arg Ala Glu Ile His Phe Leu Lys Gln Gly Cys Gly Glu Asp Lys 635 Ile Cys Gln Ser Asn Leu Gln Leu Val His Ala Arg Phe Cys Thr Arg Val Ser Asp Thr Glu Phe Gln Pro Leu Pro Met Asp Val Asp

				665					670					675
Gly	Thr	Thr	Ala	Leu 680	Phe	Ala	Leu	Ser	Gly 685	Gln	Pro	Val	Ile	Gly 690
Leu	Glu	Leu	Met	Val 695	Thr	Asn	Leu	Pro	Ser 700	Asp	Pro	Ala	Gln	Pro 705
Gln	Ala	Asp	Gly	Asp 710	Asp	Ala	His	Glu	Ala 715	Gln	Leu	Leu	Val	Met 720
Leu	Pro	Asp	Ser	Leu 725	His	Tyr	Ser	Gly	Val 730	Arg	Ala	Leu	Asp	Pro 735
Ala	Glu	Lys	Pro	Leu 740	Cys	Leu	Ser	Asn	Glu 745	Asn	Ala	Ser	His	Val 750
Glu	Cys	Glu	Leu	Gly 755	Asn	Pro	Met	Lys	Arg 760	Gly	Ala	Gln	Val	Thr 765
Phe	Tyr	Leu	Ile	Leu 770	Ser	Thr	Ser	Gly	Ile 775	Ser	Ile	Glu	Thr	Thr 780
Glu	Leu	Glu	Val	Glu 785	Leu	Leu	Leu	Ala	Thr 790	Ile	Ser	Glu	Gln	Glu 795
Leu	His	Pro	Val	Ser 800	Ala	Arg	Ala	Arg	Val 805	Phe	Ile	Glu	Leu	Pro 810
Leu	Ser	Ile	Ala	Gly 815	Met	Ala	Ile	Pro	Gln 820	Gln	Leu	Phe	Phe	Ser 825
Gly	Val	Val	Arg	Gly 830	Glu	Arg	Ala	Met	Gln 835	Ser	Glu	Arg	Asp	Val 840
Gly	Ser	Lys	Val	Lys 845	Tyr	Glu	Val	Thr	Val 850	Ser	Asn	Gln	Gly	Gln 855
Ser	Leu	Arg	Thr	Leu 860	Gly	Ser	Ala	Phe	Leu 865	Asn	Ile	Met	Trp	Pro 870
His	Glu	Ile	Ala	Asn 875	Gly	Lys	Trp	Leu	Leu 880	Tyr	Pro	Met	Gln	Val 885
Glu	Leu	Glu	Gly	Gly 890	Gln	Gly	Pro	Gly	Gln 895	Lys	Gly	Leu	Cys	Ser 900
Pro	Arg	Pro	Asn	Ile 905	Leu	His	Leu	Asp	Val 910	Asp	Ser	Arg	Asp	Arg 915
Arg	Arg	Arg	Glu	Leu 920	Glu	Pro	Pro	Glu	Gln 925	Gln	Glu	Pro	Gly	Glu 930
Arg	Gln	Glu	Pro	Ser 935	Met	Ser	Trp	Trp	Pro 940	Val	Ser	Ser	Ala	Glu 945
Lys	Lys	Lys	Asn	Ile 950	Thr	Leu	Asp	Cys	Ala 955	Arg	Gly	Thr	Ala	Asn 960

<212> DNA

<220>

<213> Artificial Sequence

<223> Synthetic oligonucleotide probe

```
Cys Val Val Phe Ser Cys Pro Leu Tyr Ser Phe Asp Arg Ala Ala
                 965
 Val Leu His Val Trp Gly Arg Leu Trp Asn Ser Thr Phe Leu Glu
                                      985
 Glu Tyr Ser Ala Val Lys Ser Leu Glu Val Ile Val Arg Ala Asn
 Ile Thr Val Lys Ser Ser Ile Lys Asn Leu Met Leu Arg Asp Ala
                                    1015
 Ser Thr Val Ile Pro Val Met Val Tyr Leu Asp Pro Met Ala Val
                                    1030
 Val Ala Glu Gly Val Pro Trp Trp Val Ile Leu Leu Ala Val Leu
                1040
                                    1045
 Ala Gly Leu Leu Val Leu Ala Leu Leu Val Leu Leu Trp Lys
                1055
                                    1060
 Met Gly Phe Phe Lys Arg Ala Lys His Pro Glu Ala Thr Val Pro
                1070
                                    1075
 Gln Tyr His Ala Val Lys Ile Pro Arg Glu Asp Arg Gln Gln Phe
                1085
                                    1090
 Lys Glu Glu Lys Thr Gly Thr Ile Leu Arg Asn Asn Trp Gly Ser
                1100
                                    1105
 Pro Arg Arg Glu Gly Pro Asp Ala His Pro Ile Leu Ala Ala Asp
                1115
                                    1120
 Gly His Pro Glu Leu Gly Pro Asp Gly His Pro Gly Pro Gly Thr
                1130
                                    1135
 Ala
<210> 438
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 438
ggctgacacc gcagtgctct tcag 24
<210> 439
<211> 24
```

305

```
<400> 439
 gctgctgggg actgcaatgt agct 24
<210> 440
<211> 46
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 440
catcctccat gtctcccatg aggtctctat tgctccacga agcatc 46
<210> 441
<211> 1964
<212> DNA
<213> Homo sapiens
<400> 441
 cgcgccgggc gcagggagct gagtggacgg ctcgagacgg cggcgcgtgc 50
 agcagctcca gaaagcagcg agttggcaga gcagggctgc atttccagca 100
 ggagctgcga gcacagtgct ggctcacaac aagatgctca aggtgtcagc 150
 cgtactgtgt gtgtgtgcag ccgcttggtg cagtcagtct ctcgcagctg 200
ccgcggcggt ggctgcagcc ggggggcggt cggacggcgg taattttctg 250
gatgataaac aatggctcac cacaatctct cagtatgaca aggaagtcgg 300
acagtggaac aaattccgag acgaagtaga ggatgattat ttccqcactt 350
ggagtccagg aaaacccttc gatcaggctt tagatccagc taaggatcca 400
tgcttaaaga tgaaatgtag tcgccataaa gtatgcattg ctcaagattc 450
tcagactgca gtctgcatta gtcaccggag gcttacacac aggatgaaag 500
aagcaggagt agaccatagg cagtggaggg gtcccatatt atccacctgc 550
aagcagtgcc cagtggtcta tcccagccct gtttgtggtt cagatggtca 600
tacctactct tttcagtgca aactagaata tcaggcatgt gtcttaggaa 650
aacagatctc agtcaaatgt gaaggacatt gcccatgtcc ttcagataag 700
cccaccagta caagcagaaa tgttaagaga gcatgcagtg acctggagtt 750
cagggaagtg gcaaacagat tgcgggactg gttcaaggcc cttcatgaaa 800
gtggaagtca aaacaagaag acaaaaacat tgctgaggcc tgagagaagc 850
agattcgata ccagcatctt gccaatttgc aaggactcac ttggctggat 900
```

gtttaacaga cttgatacaa actatgacct gctattggac cagtcagagc 950

tcagaagcat ttaccttgat aagaatgaac agtgtaccaa ggcattcttc 1000 aattottgtg acacatacaa ggacagttta atatotaata atgagtggtg 1050 ctactgcttc cagagacagc aagacccacc ttgccagact gagctcagca 1100 atattcagaa gcggcaaggg gtaaagaagc tcctaggaca gtatatcccc 1150 ctgtgtgatg aagatggtta ctacaagcca acacaatgtc atggcagtgt 1200 tggacagtgc tggtgttg acagatatgg aaatgaagtc atgggatcca 1250 gaataaatgg tgttgcagat tgtgctatag attttgagat ctccggagat 1300 tttgctagtg gcgattttca tgaatggact gatgatgagg atgatgaaga 1350 cgatattatg aatgatgaag atgaaattga agatqatqat qaaqatqaaq 1400 gggatgatga tgatggtggt gatgaccatg atgtatacat ttgattgatg 1450 acagttgaaa tcaataaatt ctacatttct aatatttaca aaaatgatag 1500 cctatttaaa attatcttct tccccaataa caaaatgatt ctaaacctca 1550 catatatttt gtataattat ttgaaaaatt gcagctaaag ttatagaact 1600 ttatgtttaa ataagaatca tttgctttga gtttttatat tccttacaca 1650 aaaagaaaat acatatgcag tctagtcaga caaaataaag ttttgaagtg 1700 ctactataat aaatttttca cgagaacaaa ctttgtaaat cttccataag 1750 caaaatgaca gctagtgctt gggatcgtac atgttaattt tttgaaagat 1800 aattctaagt gaaatttaaa ataaataaat ttttaatgac ctgggtctta 1850 aggatttagg aaaaatatgc atgctttaat tgcatttcca aagtagcatc 1900 ttgctagacc tagatgagtc aggataacag agagatacca catgactcca 1950 aaaaaaaaa aaaa 1964

<210> 442

<211> 436

<212> PRT

<213> Homo sapiens

<400> 442

Met Leu Lys Val Ser Ala Val Leu Cys Val Cys Ala Ala Ala Trp 1 5 10 15

Cys Ser Gln Ser Leu Ala Ala Ala Ala Ala Val Ala Ala Gly
20 25 30

Gly Arg Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu
35 40 45

Thr Thr Ile Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys

50 55 60

Phe Arg Asp Glu Val Glu Asp Asp Tyr Phe Arg Thr Trp Ser Pro

Gly Lys Pro Phe Asp Gln Ala Leu Asp Pro Ala Lys Asp Pro Cys 80 85 90

Leu Lys Met Lys Cys Ser Arg His Lys Val Cys Ile Ala Gln Asp 95 100 105

Ser Gln Thr Ala Val Cys Ile Ser His Arg Arg Leu Thr His Arg 110 115 120

Met Lys Glu Ala Gly Val Asp His Arg Gln Trp Arg Gly Pro Ile 125 $$ 130 $$ 135

Leu Ser Thr Cys Lys Gln Cys Pro Val Val Tyr Pro Ser Pro Val 140 145 150

Cys Gly Ser Asp Gly His Thr Tyr Ser Phe Gln Cys Lys Leu Glu 155 160 165

Tyr Gln Ala Cys Val Leu Gly Lys Gln Ile Ser Val Lys Cys Glu 170 175 180

Gly His Cys Pro Cys Pro Ser Asp Lys Pro Thr Ser Thr Ser Arg 185 190 195

Asn Val Lys Arg Ala Cys Ser Asp Leu Glu Phe Arg Glu Val Ala 200 205 210

Asn Arg Leu Arg Asp Trp Phe Lys Ala Leu His Glu Ser Gly Ser 215 220 225

Gln Asn Lys Lys Thr Lys Thr Leu Leu Arg Pro Glu Arg Ser Arg 230 235 240

Phe Asp Thr Ser Ile Leu Pro Ile Cys Lys Asp Ser Leu Gly Trp 245 250 255

Met Phe Asn Arg Leu Asp Thr Asn Tyr Asp Leu Leu Leu Asp Gln 260 265 270

Ser Glu Leu Arg Ser Ile Tyr Leu Asp Lys Asn Glu Gln Cys Thr 275 280 285

Lys Ala Phe Phe Asn Ser Cys Asp Thr Tyr Lys Asp Ser Leu Ile 290 295 300

Ser Asn Asn Glu Trp Cys Tyr Cys Phe Gln Arg Gln Gln Asp Pro 305 310 315

Pro Cys Gln Thr Glu Leu Ser Asn Ile Gln Lys Arg Gln Gly Val 320 325 330

Lys Lys Leu Leu Gly Gln Tyr Ile Pro Leu Cys Asp Glu Asp Gly 335 340 345

```
Tyr Tyr Lys Pro Thr Gln Cys His Gly Ser Val Gly Gln Cys Trp
                 350
Cys Val Asp Arg Tyr Gly Asn Glu Val Met Gly Ser Arg Ile Asn
Gly Val Ala Asp Cys Ala Ile Asp Phe Glu Ile Ser Gly Asp Phe
                 380
                                     385
Ala Ser Gly Asp Phe His Glu Trp Thr Asp Asp Glu Asp Asp Glu
Asp Asp Ile Met Asn Asp Glu Asp Glu Ile Glu Asp Asp Asp Glu
                 410
Asp Glu Gly Asp Asp Asp Asp Gly Gly Asp Asp His Asp Val Tyr
                                                          435
Ile
<210> 443
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 443
cagcaatatt cagaagcggc aaggg 25
<210> 444
<211> 28
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 444
catcatggtc atcaccacca tcatcatc 28
<210> 445
<211> 48
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 445
ggttactaca agccaacaca atgtcatggc agtgttggac agtgctgg 48
<210> 446
<211> 3617
<212> DNA
<213> Homo sapiens
```

<400> 446 cagactecag atttecetqt caaccaegag gagtecagag aggaaaegeg 50 gageggagac aacagtacct gacgcctctt tcagcccggg atcgccccag 100 cagggatggg cgacaagatc tggctgccct tccccgtgct ccttctggcc 150 getetgeete eggtgetget geetggggeg geeggettea eacetteeet 200 cgatagcgac ttcaccttta cccttcccgc cggccagaag gagtgcttct 250 accaqcccat gcccctgaaq gcctcgctgg agatcgagta ccaagtttta 300 gatggagcag gattagatat tgatttccat cttgcctctc cagaaggcaa 350 aaccttagtt tttgaacaaa gaaaatcaga tggagttcac actgtagaga 400 ctgaagttgg tgattacatg ttctgctttg acaatacatt cagcaccatt 450 tctgagaagg tgattttctt tgaattaatc ctggataata tgggagaaca 500 ggcacaagaa caagaagatt ggaagaaata tattactggc acagatatat 550 tggatatgaa actggaagac atcctggaat ccatcaacag catcaagtcc 600 agactaagca aaagtgggca catacaaatt ctgcttagag catttgaagc 650 tcgtgatcga aacatacaag aaagcaactt tgatagagtc aatttctggt 700 ctatggttaa tttagtggtc atggtggtgg tgtcagccat tcaagtttat 750 atgctgaaga gtctgtttga agataagagg aaaagtagaa cttaaaactc 800 caaactagag tacgtaacat tgaaaaatga ggcataaaaa tgcaataaac 850 tgttacagtc aagaccatta atggtcttct ccaaaatatt ttgagatata 900 aaagtaggaa acaggtataa ttttaatgtg aaaattaagt cttcactttc 950 tgtgcaagta atcctgctga tccagttgta cttaagtgtg taacaggaat 1000 attttgcaga atataggttt aactgaatga agccatatta ataactgcat 1050 tttcctaact ttgaaaaatt ttgcaaatgt cttaggtgat ttaaataaat 1100 gagtattggg cctaattgca acaccagtct gtttttaaca ggttctatta 1150 cccaqaactt ttttqtaaat qcqqcaqtta caaattaact qtqqaaqttt 1200 tcagttttaa gttataaatc acctgagaat tacctaatga tggattgaat 1250 aaatctttag actacaaaag cccaactttt ctctatttac atatgcatct 1300 ctcctataat gtaaatagaa taatagcttt gaaatacaat taggtttttg 1350 agatttttat aaccaaatac atttcagtgt aacatattag cagaaagcat 1400 tagtctttgt actttgctta cattcccaaa agctgacatt ttcacgattc 1450 ttaaaaacac aaagttacac ttactaaaat taggacatgt tttctctttg 1500 aaatgaagaa tatagtttaa aagcttcctc ctccataggg acacattttc 1550 tctaaccctt aactaaagtg taggatttta aaattaaatg tgaggtaaaa 1600 taagtttatt tttaatagta tctgtcaagt taatatctgt caacagttaa 1650 taatcatgtt atgttaattt taacatgatt gctgacttgg ataattcatt 1700 attaccagca gttatgaagg aaatattgct aaaatgatct gggcctacca 1750 taaataaata totootttto tgagototaa gaattatoag aaaacaggaa 1800 agaatttaga aaaacttgag aaaacctaat ccaaaataaa attcacttaa 1850 gtagaactat aaataaatat ctagaatctg actggctcat catgacatcc 1900 tactcataac ataaatcaaa ggagatgatt aatttccagt tagctggaag 1950 aaactttggc tgtaggtttt tattttctac aagaattctg gtttgaatta 2000 tttttgtaag caggtacatt ttataaaatg taagccctac tgtaaggttt 2050 agcactgggt gtacatattt attaaaaatt tttattataa caacttttat 2100 taaaatggcc tttctgaaca ctttatttat tgatgttgaa gtaaggatta 2150 gaaacataga ctcccaagtt ttaaacacct aaatgtgaat aacccatata 2200 tacaacaaag tttctgccat ctagcttttt gaagtctatg ggggtcttac 2250 tcaagtacta gtaatttaac ttcatcatga atgaactata atttttaagt 2300 tatgcccatt tataacgttg tttatgacta cattgtgagt tagaaacaaa 2350 cttaaaattt ggggtataga acccctcaac aggttagtaa tgctggaatt 2400 cttgatgagc aataatgata accagagagt gatttcattt acactcatag 2450 tagtataaaa agagatacat ttccctctta ggcccctggg agaagagcag 2500 cttagatttc cctactggca aggtttttaa aaatgaggta aatgccgtat 2550 atgatcaatt accttaattg gccaagaaaa tgcttcaggt gtctaggggt 2600 atcctctgca acacttgcag aacaaaggtc aataagatcc ttgcctatga 2650 atacccctcc cttttgcgct gttaaatttg caatgagaag caaatttaca 2700 gtaccataac taataaagca gggtacagat ataaactact gcatcttttc 2750 tataaaactg tgattaagaa ttctacctct cctgtatggc tgttactgta 2800 ctgtactctc tgactcctta cctaacaatg aatttgttac ataatcttct 2850 acatgtatga tttgtgccac tgatcttaaa cctatgattc agtaacttct 2900 taccatataa aaacgataat tgctttattt ggaaaagaat ttaggaatac 2950
taaggacaat tattttata gacaaagtaa aaagacagat atttaagagg 3000
cataaccaaa aaagcaaaac ttgtaaacag agtaaaaatc tttaatattt 3050
ctaaagacat actgtttatc tgcttcatat gctttttta atttcactat 3100
tccatttcta aattaaagtt atgctaaatt gagtaagctg tttatcactt 3150
aacagctcat tttgtcttt tcaatataca aattttaaaa atactacaat 3200
atttaactaa ggcccaaccg atttccataa tgtagcagtt accgtgttca 3250
cctcacacta aggcctagag tttgctctga tatgcatttg gatgattaat 3300
gttatgctgt tcttcatgt gaatgtcaag acatggaggg tgtttgtaat 3350
tttatggtaa aattaatcct tcttacacat aatggtgtct taaaattgac 3400
aaaaaatgag cacttacaat tgtatgtctc ctcaaatgaa gattctttat 3450
gtgaaatttt aaaagcaat gattccgcat gtaaggattt ttcatctgaa 3500
gtacaataat gcacaatcag tgttgctcaa actgctttat acttataaac 3550
agccatctta aataagcaac gtattgtgag tactgatatg tatataataa 3600
aaattatcaa aggaaaa 3617

<210> 447

<211> 229

<212> PRT

<213> Homo sapiens

<400> 447

Met Gly Asp Lys Ile Trp Leu Pro Phe Pro Val Leu Leu Ala 1 5 10 15

Ala Leu Pro Pro Val Leu Leu Pro Gly Ala Ala Gly Phe Thr Pro 20 25 30

Ser Leu Asp Ser Asp Phe Thr Phe Thr Leu Pro Ala Gly Gln Lys 35 40 45

Glu Cys Phe Tyr Gln Pro Met Pro Leu Lys Ala Ser Leu Glu Ile 50 55 60

Glu Tyr Gln Val Leu Asp Gly Ala Gly Leu Asp Ile Asp Phe His
65 70 75

Leu Ala Ser Pro Glu Gly Lys Thr Leu Val Phe Glu Gln Arg Lys

Ser Asp Gly Val His Thr Val Glu Thr Glu Val Gly Asp Tyr Met $95 \hspace{1.5cm} 100 \hspace{1.5cm} 105$

Phe Cys Phe Asp Asn Thr Phe Ser Thr Ile Ser Glu Lys Val Ile

				110					115					120
Phe	Phe	Glu	Leu	Ile 125	Leu	Asp	Asn	Met	Gly 130	Glu	Gln	Ala	Gln	Glu 135
Gln	Glu	Asp	Trp	Lys 140	Lys	Tyr	Ile	Thr	Gly 145	Thr	Asp	Ile	Leu	Asp 150
Met	Lys	Leu	Glu	Asp 155	Ile	Leu	Glu	Ser	Ile 160	Asn	Ser	Ile	Lys	Ser 165
Arg	Leu	Ser	Lys	Ser 170	Gly	His	Ile	Gln	Ile 175	Leu	Leu	Arg	Ala	Phe 180
Glu	Ala	Arg	Asp	Arg 185	Asn	Ile	Gln	Glu	Ser 190	Asn	Phe	Asp	Arg	Val 195
Asn	Phe	Trp	Ser	Met 200	Val	Asn	Leu	Val	Val 205	Met	Val	Val	Val	Ser 210
Ala	Ile	Gln	Val	Tyr 215	Met	Leu	Lys	Ser	Leu 220	Phe	Glu	Asp	Lys	Arg 225
Lys	Ser	Arg	Thr											
<210> 448 <211> 23														
	<212> DNA <213> Artificial Sequence													
<220: <223:		nthe [.]	tic ·	olig	onuc.	leot:	ide]	prob	е					
<400		ggg 8	ctgg	gcga	ca a	ga 2	3							
<210 <211		-												
<212 <213			cial	Seq	uenc	е								
<220 <223		nthe	tic	olig	onuc	leot	ide :	prob	e					
<400 gtc		9 agt	ttca	tatc	ca a	ta 2	3							
<210 <211		0												
	<212> DNA <213> Artificial Sequence													
	<220> <223> Synthetic oligonucleotide probe													
	<pre><223> Synthetic Offgondcreotide probe <400> 450 ccagaaggag cacggggaag ggcagccaga tcttgtcgcc cat 43</pre>													

```
<210> 451
<211> 859
<212> DNA
```

<213> Homo sapiens

<400> 451 ccatccctga gatcttttta taaaaaaccc agtctttgct gaccagacaa 50 agcataccag atctcaccag agagtcgcag acactatgct gcctcccatg 100 qccctqccca qtqtqtcctq gatgctqctt tcctqcctca ttctcctqtg 150 tcaggttcaa ggtgaagaaa cccagaagga actgccctct ccacggatca 200 gctgtcccaa aggctccaag gcctatggct cccctgcta tgccttgttt 250 ttgtcaccaa aatcctggat ggatgcagat ctggcttgcc agaagcggcc 300 ctctggaaaa ctggtgtctg tgctcagtgg ggctgaggga tccttcgtgt 350 cctccctqgt gaggagcatt agtaacagct actcatacat ctggattggg 400 ctccatgacc ccacacaggg ctctgagcct gatggagatg gatgggagtg 450 gagtagcact gatgtgatga attactttgc atgggagaaa aatccctcca 500 ccatcttaaa ccctgqccac tgtgggagcc tgtcaagaag cacaggattt 550 ctgaagtgga aagattataa ctgtgatgca aagttaccct atgtctgcaa 600 gttcaaggac tagggcaggt gggaagtcag cagcctcagc ttggcgtgca 650 gctcatcatg gacatgagac cagtgtgaag actcaccctg gaagagaata 700 ttctccccaa actgccctac ctgactacct tgtcatgatc ctccttcttt 750 ttcctttttc ttcaccttca tttcaggctt ttctctgtct tccatgtctt 800 aaaaaaaaa 859

<210> 452

<211> 175

<212> PRT

<213> Homo sapiens

<400> 452

Met Leu Pro Pro Met Ala Leu Pro Ser Val Ser Trp Met Leu Leu 1 5 10 15

Ser Cys Leu Ile Leu Cys Gln Val Gln Gly Glu Glu Thr Gln 20 25 30

Lys Glu Leu Pro Ser Pro Arg Ile Ser Cys Pro Lys Gly Ser Lys 35 40 45

Ala Tyr Gly Ser Pro Cys Tyr Ala Leu Phe Leu Ser Pro Lys Ser

50 55 60

Trp Met Asp Ala Asp Leu Ala Cys Gln Lys Arg Pro Ser Gly Lys 65 70 75

Leu Val Ser Val Leu Ser Gly Ala Glu Gly Ser Phe Val Ser Ser 80 85 90

Leu Val Arg Ser Ile Ser Asn Ser Tyr Ser Tyr Ile Trp Ile Gly 95 100 105

Leu His Asp Pro Thr Gln Gly Ser Glu Pro Asp Gly Asp Gly Trp 110 115 120

Glu Trp Ser Ser Thr Asp Val Met Asn Tyr Phe Ala Trp Glu Lys 125 130 135

Asn Pro Ser Thr Ile Leu Asn Pro Gly His Cys Gly Ser Leu Ser 140 145 150

Arg Ser Thr Gly Phe Leu Lys Trp Lys Asp Tyr Asn Cys Asp Ala 155 160 165

Lys Leu Pro Tyr Val Cys Lys Phe Lys Asp 170 175

<210> 453

<211> 550

<212> DNA

<213> Homo sapiens

<400> 453

ccagtctgtcgccacctcacttggtgtctgctgtccccgccaggcaagcc50tggggtgagagcacagaggagtgggccgggaccatgcgggggacgcggct100ggcgctcctggcgctggtgctggctgcctgcggaagagctggcgccggccc150tgcgctgctacgtctgtccggagcccacaggagtgtcggactgtgtcacc200atcgccacctgcaccaccaacgaaaccatgtgcaagaccacactctactc250ccgggagatagtgtaccccttccagggggactccacggtgaccaagtcct300gtgccagcaagtgtaagccctcggatgtggatggcatcggccagaccctg350cccgtgtcctgctgcaatactgagctgtgcaatgtagacggggcgcccgc400tctgaacagcctccactgcggggccctcacgctcctccactcttgagcc450tccgactgtagagtcccgcccacccccatggccctatgcggcccagccc500

cgaatgcctt gaagaagtgc cccctgcacc aggaaaaaaa aaaaaaaaa 550

<210> 454

<211> 125

<212> PRT

<213> Homo sapiens

```
      <400> 454

      Met Arg Gly Thr Arg Leu Ala Leu Leu Ala Leu Val Leu Ala Ala 15

      Cys Gly Glu Leu Ala Pro Ala Leu Arg Cys Tyr Val Cys Pro Glu 20

      Pro Thr Gly Val Ser Asp Cys Val Thr Ile Ala Thr Cys Thr Thr 45

      Asn Glu Thr Met Cys Lys Thr Thr Leu Tyr Ser Arg Glu Ile Val 60

      Tyr Pro Phe Gln Gly Asp Ser Thr Val Thr Lys Ser Cys Ala Ser 75

      Lys Cys Lys Pro Ser Asp Val Asp Gly Ile Gly Gln Thr Leu Pro 80

      Val Ser Cys Cys Asn Thr Glu Leu Cys Asn Val Asp Gly Ala Pro 105

      Ala Leu Asn Ser Leu His Cys Gly Ala Leu Thr Leu Thr Leu Leu Pro 120

      Leu Ser Leu Arg Leu 125
```

<210> 455 <211> 1518 <212> DNA <213> Homo sapiens

<400> 455
ctgcagtcag gactctggga ccgcaggggg ctcccggacc ctgactctgc 50
agccgaaccg gcacggtttc gtggggaccc aggcttgcaa agtgacggtc 100
attttctctt tctttctccc tcttgagtcc ttctgagatg atggctctgg 150
gcgcagcggg agctacccgg gtctttgtcg cgatggtagc ggcggctctc 200
ggcggccacc ctctgctggg agtgagcgcc accttgaact cggttctcaa 250
ttccaacgct atcaagaacc tgccccacc gctgggcggc gctgcggggc 300
acccaggctc tgcagtcagc gccgcgcgg gaatcctgta cccgggcggg 350
aataagtacc agaccattga caactaccag ccgtacccgt gcgcagagga 400
cgaggagtgc gcactgatg agtactgcc tagtcccacc cgcggagggg 450
acgcaggcgt gcaaatctgt ctcgcctgca ggaagcgccg aaaacgctgc 500
atgcgtcacg ctatgtgctg ccccgggaat tactgcaaaa atggaatatg 550
tqtqtcttct gatcaaaatc atttccgagg agaaattgag gaaaccatca 600

ctgaaagctt tggtaatgat catagcacct tggatgggta ttccagaaga 650 accaccttgt cttcaaaaat gtatcacacc aaaggacaag aaggttctgt 700 ttgtctccgg tcatcagact gtgcctcagg attgtgttgt gctagacact 750 tctggtccaa gatctgtaaa cctgtcctga aagaaggtca agtgtgtacc 800 aagcatagga gaaaaggctc tcatggacta gaaatattcc agcgttgtta 850 ctgtggagaa ggtctgtctt gccggataca gaaagatcac catcaagcca 900 gtaattette taggetteac acttgteaga gacactaaac cagetateea 950 aatgcagtga actcctttta tataatagat gctatgaaaa ccttttatga 1000 ccttcatcaa ctcaatccta aggatataca agttctgtgg tttcagttaa 1050 gcattccaat aacaccttcc aaaaacctgg agtgtaagag ctttgtttct 1100 ttatggaact cccctgtgat tgcagtaaat tactgtattg taaattctca 1150 gtgtggcact tacctgtaaa tgcaatgaaa cttttaatta tttttctaaa 1200 ggtgctgcac tgcctatttt tcctcttgtt atgtaaattt ttgtacacat 1250 tgattgttat cttgactgac aaatattcta tattgaactg aagtaaatca 1300 tttcagctta tagttcttaa aagcataacc ctttacccca tttaattcta 1350 gagtctagaa cgcaaggatc tcttggaatg acaaatgata ggtacctaaa 1400 atgtaacatg aaaatactag cttattttct gaaatgtact atcttaatgc 1450 ttaaattata tttcccttta ggctgtgata gtttttgaaa taaaatttaa 1500 catttaaaaa aaaaaaaa 1518

<210> 456

<211> 266

<212> PRT

<213> Homo sapiens

<400> 456

Met Met Ala Leu Gly Ala Ala Gly Ala Thr Arg Val Phe Val Ala 1 5 10 15

Met Val Ala Ala Leu Gly Gly His Pro Leu Leu Gly Val Ser
20 25 30

Ala Thr Leu Asn Ser Val Leu Asn Ser Asn Ala Ile Lys Asn Leu 35 40 45

Pro Pro Pro Leu Gly Gly Ala Ala Gly His Pro Gly Ser Ala Val 50 55 60

Ser Ala Ala Pro Gly Ile Leu Tyr Pro Gly Gly Asn Lys Tyr Gln 65 70 75

```
Thr Ile Asp Asn Tyr Gln Pro Tyr Pro Cys Ala Glu Asp Glu Glu
                 80
Cys Gly Thr Asp Glu Tyr Cys Ala Ser Pro Thr Arg Gly Gly Asp
Ala Gly Val Gln Ile Cys Leu Ala Cys Arg Lys Arg Lys Arg
Cys Met Arg His Ala Met Cys Cys Pro Gly Asn Tyr Cys Lys Asn
                125
Gly Ile Cys Val Ser Ser Asp Gln Asn His Phe Arg Gly Glu Ile
                140
Glu Glu Thr Ile Thr Glu Ser Phe Gly Asn Asp His Ser Thr Leu
                                                         165
                155
Asp Gly Tyr Ser Arg Arg Thr Thr Leu Ser Ser Lys Met Tyr His
                                                         180
                170
Thr Lys Gly Gln Glu Gly Ser Val Cys Leu Arg Ser Ser Asp Cys
                                     190
                                                         195
Ala Ser Gly Leu Cys Cys Ala Arg His Phe Trp Ser Lys Ile Cys
                                                         210
Lys Pro Val Leu Lys Glu Gly Gln Val Cys Thr Lys His Arg Arg
                                                         225
Lys Gly Ser His Gly Leu Glu Ile Phe Gln Arg Cys Tyr Cys Gly
                                                         240
Glu Gly Leu Ser Cys Arg Ile Gln Lys Asp His His Gln Ala Ser
                                     250
                                                         255
Asn Ser Ser Arg Leu His Thr Cys Gln Arg His
```

<210> 457

<211> 638

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 30, 123, 133, 139, 180, 214, 259, 282, 308, 452, 467, 471, 473, 509, 556

<223> unknown base

<400> 457

tgtgtttccc tgcagtcaga atttgggacn gcaggggttc ccggacctga 50
ttttgcagcg gaacgggaag gttttgtggg acccaggttg aaatgacggt 100
cattttttt tctttctcct tcnggagtcc ttntgagang atggttttgg 150
gcgcagcggg agctaacccg gtttttgtn gcgatggtag cggcggtttt 200

cggcggccac cttntgctgg gagtgagcgc caccttgaat cggttttcaa 250 ttccaacgnt atcaagaacc tgccccacc gntgggcggc gctgcggggc 300 acccaggntt tgcagtcagc gccgcgcgg gaatcctgta cccgggcggg 350 aataagtacc agaccattga caattaccag ccgtacccgt gcgcagagga 400 cgaggagtgc ggcactgatg agtactgcgc tagtcccacc cgcggagggg 450 angcgggcgt gcaaatntgt ntngcctgca ggaagcgccg aaaacgctgc 500 atgcgtcang ctatgtgctg ccccgggaat tactgcaaaa atggaatatg 550 tgtgtnttct gatcaaaatc attccgagg agaaattgag gaaaccatca 600 ctgaaagctt tggtaatgat catagcacct tggatggg 638

<210> 458 <211> 4040

<212> DNA

<213> Homo sapiens

<400> 458 gaggaaccta ccggtaccgg ccgcgcgctg gtagtcgccg gtgtggctgc 50 acctcaccaa tcccgtgcgc cgcggctggg ccgtcggaga gtgcgtgtgc 100 ttctctcctg cacgcggtgc ttgggctcgg ccaggcgggg tccgccgcca 150 gggtttgagg atgggggagt agctacagga agcgaccccg cgatggcaag 200 gtatattttt gtggaatgaa aaggaagtat tagaaatgag ctgaagacca 250 ttcacagatt aatatttttg gggacagatt tgtgatgctt gattcaccct 300 tgaagtaatg tagacagaag ttctcaaatt tgcatattac atcaactgga 350 accagcagtg aatcttaatg ttcacttaaa tcagaacttg cataagaaag 400 agaatgggag tctggttaaa taaagatgac tatatcagag acttgaaaag 450 gatcattctc tgttttctga tagtgtatat ggccatttta gtgggcacag 500 atcaggattt ttacagttta cttggagtgt ccaaaactgc aagcagtaga 550 gaaataagac aagctttcaa gaaattggca ttgaagttac atcctgataa 600 aaacccgaat aacccaaatg cacatggcga ttttttaaaa ataaatagag 650 catatgaagt actcaaagat gaagatctac ggaaaaagta tgacaaatat 700 ggagaaaagg gacttgagga taatcaaggt ggccagtatg aaagctggaa 750 ctattatcgt tatgattttg gtatttatga tgatgatcct gaaatcataa 800 cattggaaag aagagaattt gatgctgctg ttaattctgg agaactgtgg 850

tttgtaaatt tttactcccc aggctgttca cactgccatg atttagctcc 900 cacatggaga gactttgcta aagaagtgga tgggttactt cgaattggag 950 ctgttaactg tggtgatgat agaatgcttt gccgaatgaa aggagtcaac 1000 agctatecea gtetetteat tttteggtet ggaatggeee cagtgaaata 1050 tcatggagac agatcaaagg agagtttagt gagttttgca atgcagcatg 1100 ttagaagtac agtgacagaa ctttggacag gaaattttgt caactccata 1150 caaactgctt ttgctgctgg tattggctgg ctgatcactt tttgttcaaa 1200 aggaggagat tgtttgactt cacagacacg actcaggctt agtggcatgt 1250 tgtttctcaa ctcattggat gctaaagaaa tatatttgga agtaatacat 1300 aatcttccag attttgaact actttcggca aacacactag aggatcgttt 1350 ggctcatcat cggtggctgt tattttttca ttttggaaaa aatgaaaatt 1400 caaatgatcc tgagctgaaa aaactaaaaa ctctacttaa aaatgatcat 1450 attcaagttg gcaggtttga ctgttcctct gcaccagaca tctgtagtaa 1500 tctgtatgtt tttcagccgt ctctagcagt atttaaagga caaggaacca 1550 aagaatatga aattcatcat ggaaagaaga ttctatatga tatacttgcc 1600 tttgccaaag aaagtgtgaa ttctcatgtt accacgcttg gacctcaaaa 1650 ttttcctgcc aatgacaaag aaccatggct tgttgatttc tttgccccct 1700 ggtgtccacc atgtcgagct ttactaccag agttacgaag agcatcaaat 1750 cttctttatg gtcagcttaa gtttggtaca ctagattgta cagttcatga 1800 gggactctgt aacatgtata acattcaggc ttatccaaca acagtggtat 1850 tcaaccagtc caacattcat gagtatgaag gacatcactc tgctgaacaa 1900 atcttggagt tcatagagga tcttatgaat ccttcagtgg tctcccttac 1950 acccaccacc ttcaacgaac tagttacaca aagaaaacac aacgaagtct 2000 ggatggttga tttctattct ccgtggtgtc atccttgcca agtcttaatg 2050 ccagaatgga aaagaatggc ccggacatta actggactga tcaacgtggg 2100 cagtatagat tgccaacagt atcattcttt ttgtgcccag gaaaacgttc 2150 aaagataccc tgagataaga ttttttcccc caaaatcaaa taaagcttat 2200 cagtatcaca gttacaatgg ttggaatagg gatgcttatt ccctgagaat 2250 ctggggtcta ggatttttac ctcaagtatc cacagatcta acacctcaga 2300

ctttcagtga aaaagttcta caagggaaaa atcattgggt gattgatttc 2350 tatgctcctt ggtgtggacc ttgccagaat tttgctccag aatttgagct 2400 cttggctagg atgattaaag gaaaagtgaa agctggaaaa gtagactgtc 2450 aggettatge teagacatge eagaaagetg ggateaggge etateeaact 2500 gttaagtttt atttctacga aagagcaaag agaaattttc aagaagagca 2550 gataaatacc agagatgcaa aagcaatcgc tgccttaata agtgaaaaat 2600 tggaaactct ccgaaatcaa ggcaagagga ataaggatga actttgataa 2650 tgttgaagat gaagaaaaag tttaaaagaa attctgacag atgacatcag 2700 aagacaccta tttagaatgt tacatttatg atgggaatga atgaacatta 2750 tottagaett geagttgtae tgeeagaatt atetaeagea etggtgtaaa 2800 agaagggtct gcaaactttt tctgtaaagg gccggtttat aaatatttta 2850 gactttgcag gctataatat atggttcaca catgagaaca agaatagagt 2900 catcatgtat tctttgttat ttgcttttaa caacctttaa aaaatattaa 2950 aacgattett ageteagage catacaaaag taggetggat teagteeatg 3000 qaccataqat tqctqtcccc ctcqacqqac ttataatgtt tcagqtqqct 3050 qqcttqaaca tqaqtctqct qtqctatcta cataaatgtc taagttgtat 3100 aaagtccact ttcccttcac gttttttggc tgacctgaaa agaggtaact 3150 tagtttttgg tcacttgttc tcctaaaaat gctatcccta accatatatt 3200 tatatttcgt tttaaaaaca cccatgatgt ggcacagtaa acaaaccctg 3250 ttatgctqta ttattatgag gagattcttc attgttttct ttccttctca 3300 aaqqttqaaa aaatqctttt aatttttcac agccgagaaa cagtgcagca 3350 qtatatqtqc acacaqtaaq tacacaaatt tqaqcaacaq taaqtqcaca 3400 aattctgtag tttgctgtat catccaggaa aacctgaggg aaaaaaatta 3450 tagcaattaa ctgggcattg tagagtatcc taaatatgtt atcaagtatt 3500 tagagttcta tattttaaag atatatgtgt tcatgtattt tctgaaattg 3550 ctttcataga aattttccca ctgatagttg atttttgagg catctaatat 3600 ttacatattt gccttctgaa ctttgttttg acctgtatcc tttatttaca 3650 ttgggttttt ctttcatagt tttggttttt cactcctgtc cagtctattt 3700 attattcaaa taggaaaaat tactttacag gttgttttac tgtagcttat 3750 aatgatactg tagttattcc agttactagt ttactgtcag agggctgcct 3800 ttttcagata aatattgaca taataactga agttatttt ataagaaaat 3850 caagtatata aatctaggaa agggatcttc tagtttctgt gttgtttaga 3900 ctcaaagaat cacaaatttg tcagtaacat gtagttgttt agttataatt 3950 cagagtgtac agaatggtaa aaattccaat cagtcaaaag aggtcaatga 4000 attaaaaggc ttgcaacttt ttcaaaaaaa aaaaaaaaa 4040

<210> 459

<211> 747

<212> PRT

<213> Homo sapiens

<400> 459

Met Gly Val Trp Leu Asn Lys Asp Asp Tyr Ile Arg Asp Leu Lys 1 5 10 15

Arg Ile Ile Leu Cys Phe Leu Ile Val Tyr Met Ala Ile Leu Val 20 25 30

Gly Thr Asp Gln Asp Phe Tyr Ser Leu Leu Gly Val Ser Lys Thr 35 40 45

Ala Ser Ser Arg Glu Ile Arg Gln Ala Phe Lys Lys Leu Ala Leu
50 55 60

Lys Leu His Pro Asp Lys Asn Pro Asn Asn Pro Asn Ala His Gly 65 70 75

Asp Phe Leu Lys Ile Asn Arg Ala Tyr Glu Val Leu Lys Asp Glu 80 85 90

Asp Leu Arg Lys Lys Tyr Asp Lys Tyr Gly Glu Lys Gly Leu Glu 95 100 105

Asp Asn Gln Gly Gly Gln Tyr Glu Ser Trp Asn Tyr Tyr Arg Tyr 110 115 120

Asp Phe Gly Ile Tyr Asp Asp Pro Glu Ile Ile Thr Leu Glu 125 130 135

Arg Arg Glu Phe Asp Ala Ala Val Asn Ser Gly Glu Leu Trp Phe 140 145 150

Val Asn Phe Tyr Ser Pro Gly Cys Ser His Cys His Asp Leu Ala 155 160 165

Pro Thr Trp Arg Asp Phe Ala Lys Glu Val Asp Gly Leu Leu Arg 170 175 180

Ile Gly Ala Val Asn Cys Gly Asp Asp Arg Met Leu Cys Arg Met 185 190 195

Lys Gly Val Asn Ser Tyr Pro Ser Leu Phe Ile Phe Arg Ser Gly

				200					205					210
Met	Ala	Pro	Val	Lys 215	Tyr	His	Gly	Asp	Arg 220	Ser	Lys	Glu	Ser	Leu 225
Val	Ser	Phe	Ala	Met 230	Gln	His	Val	Arg	Ser 235	Thr	Val	Thr	Glu	Leu 240
Trp	Thr	Gly	Asn	Phe 245	Val	Asn	Ser	Ile	Gln 250	Thr	Ala	Phe	Ala	Ala 255
Gly	Ile	Gly	Trp	Leu 260	Ile	Thr	Phe	Cys	Ser 265	Lys	Gly	Gly	Asp	Cys 270
Leu	Thr	Ser	Gln	Thr 275	Arg	Leu	Arg	Leu	Ser 280	Gly	Met	Leu	Phe	Leu 285
Asn	Ser	Leu	Asp	Ala 290	Lys	Glu	Ile	Tyr	Leu 295	Glu	Val	Ile	His	Asn 300
Leu	Pro	Asp	Phe	Glu 305	Leu	Leu	Ser	Ala	Asn 310	Thr	Leu	Glu	Asp	Arg 315
Leu	Ala	His	His	Arg 320	Trp	Leu	Leu	Phe	Phe 325	His	Phe	Gly	Lys	Asn 330
Glu	Asn	Ser	Asn	Asp 335	Pro	Glu	Leu	Lys	Lys 340	Leu	Lys	Thr	Leu	Leu 345
Lys	Asn	Asp	His	Ile 350	Gln	Val	Gly	Arg	Phe 355	Asp	Cys	Ser	Ser	Ala 360
Pro	Asp	Ile	Cys	Ser 365	Asn	Leu	Tyr	Val	Phe 370	Gln	Pro	Ser	Leu	Ala 375
Val	Phe	Lys	Gly	Gln 380	Gly	Thr	Lys	Glu	Tyr 385	Glu	Ile	His	His	Gly 390
Lys	Lys	Ile	Leu	Tyr 395	Asp	Ile	Leu	Ala	Phe 400	Ala	Lys	Glu	Ser	Val 405
Asn	Ser	His	Val	Thr 410	Thr	Leu	Gly	Pro	Gln 415	Asn	Phe	Pro	Ala	Asn 420
Asp	Lys	Glu	Pro	Trp 425	Leu	Val	Asp	Phe	Phe 430	Ala	Pro	Trp	Cys	Pro 435
Pro	Суз	Arg	Ala	Leu 440	Leu	Pro	Glu	Leu	Arg 445	Arg	Ala	Ser	Asn	Leu 450
Leu	Tyr	Gly	Gln	Leu 455	Lys	Phe	Gly	Thr	Leu 460	Asp	Cys	Thr	Val	His 465
Glu	Gly	Leu	Cys	Asn 470	Met	Tyr	Asn	Ile	Gln 475	Ala	Tyr	Pro	Thr	Thr 480
Val	Val	Phe	Asn	Gln 485	Ser	Asn	Ile	His	Glu 490	Tyr	Glu	Gly	His	His 495

```
Ser Ala Glu Gln Ile Leu Glu Phe Ile Glu Asp Leu Met Asn Pro
Ser Val Val Ser Leu Thr Pro Thr Thr Phe Asn Glu Leu Val Thr
                 515
Gln Arg Lys His Asn Glu Val Trp Met Val Asp Phe Tyr Ser Pro
Trp Cys His Pro Cys Gln Val Leu Met Pro Glu Trp Lys Arg Met
                 545
Ala Arg Thr Leu Thr Gly Leu Ile Asn Val Gly Ser Ile Asp Cys
                                                          570
                 560
Gln Gln Tyr His Ser Phe Cys Ala Gln Glu Asn Val Gln Arg Tyr
                                                          585
                 575
                                     580
Pro Glu Ile Arg Phe Phe Pro Pro Lys Ser Asn Lys Ala Tyr Gln
                 590
Tyr His Ser Tyr Asn Gly Trp Asn Arg Asp Ala Tyr Ser Leu Arg
                                     610
                                                          615
Ile Trp Gly Leu Gly Phe Leu Pro Gln Val Ser Thr Asp Leu Thr
Pro Gln Thr Phe Ser Glu Lys Val Leu Gln Gly Lys Asn His Trp
Val Ile Asp Phe Tyr Ala Pro Trp Cys Gly Pro Cys Gln Asn Phe
Ala Pro Glu Phe Glu Leu Leu Ala Arg Met Ile Lys Gly Lys Val
                                                          675
Lys Ala Gly Lys Val Asp Cys Gln Ala Tyr Ala Gln Thr Cys Gln
Lys Ala Gly Ile Arg Ala Tyr Pro Thr Val Lys Phe Tyr Phe Tyr
                                                          705
Glu Arg Ala Lys Arg Asn Phe Gln Glu Glu Gln Ile Asn Thr Arg
Asp Ala Lys Ala Ile Ala Ala Leu Ile Ser Glu Lys Leu Glu Thr
                                                          735
Leu Arg Asn Gln Gly Lys Arg Asn Lys Asp Glu Leu
<210> 460
```

<211> 24

<212> DNA

<213> Artificial Sequence

<223> Synthetic oligonucleotide probe

```
<400> 460
actccccagg ctgttcacac tgcc 24
<210> 461
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 461
gatcagccag ccaataccag cagc 24
<210> 462
<211> 50
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 462
 qtqqtqatqa taqaatqctt tqccqaatqa aaqqaqtcaa caqctatccc 50
<210> 463
<211> 1818
<212> DNA
<213> Homo sapiens
<400> 463
 agacagtacc tcctccctag gactacacaa ggactgaacc agaaggaaga 50
 ggacagagca aagccatgaa catcatccta gaaatccttc tgcttctgat 100
 caccatcatc tactcctact tggagtcgtt ggtgaagttt ttcattcctc 150
 agaggagaaa atctgtggct ggggagattg ttctcattac tggagctggg 200
 catggaatag gcaggcagac tacttatgaa tttgcaaaac gacagagcat 250
 attggttctg tgggatatta ataagcgcgg tgtggaggaa actgcagctg 300
 agtgccgaaa actaggcgtc actgcgcatg cgtatgtggt agactgcagc 350
 aacagagaag agatctatcg ctctctaaat caggtgaaga aagaagtggg 400
 tgatgtaaca atcgtggtga ataatgctgg gacagtatat ccagccgatc 450
 ttctcagcac caaggatgaa gagattacca agacatttga ggtcaacatc 500
 ctaggacatt tttggatcac aaaagcactt cttccatcga tgatggagag 550
 aaatcatggc cacatcgtca cagtggcttc agtgtgcggc cacgaaggga 600
 ttccttacct catcccatat tgttccagca aatttgccgc tgttggcttt 650
```

cacagaggtc tgacatcaga acttcaggcc ttgggaaaaa ctggtatcaa 700

aacctcatgt ctctgcccag tttttgtgaa tactgggttc accaaaaatc 750 caagcacaag attatggcct gtattggaga cagatgaagt cgtaagaagt 800 ctgatagatg gaatacttac caataagaaa atgatttttg ttccatcgta 850 tatcaatatc tttctgagac tacagaagtt tcttcctgaa cgcgcctcag 900 cgattttaaa tcgtatgcag aatattcaat ttgaagcagt ggttggccac 950 aaaatcaaaa tgaaatgaat aaataagctc cagccagaga tgtatgcatg 1000 ataatgatat gaatagtttc gaatcaatgc tgcaaagctt tatttcacat 1050 tttttcagtc ctgataatat taaaaacatt ggtttggcac tagcagcagt 1100 caaacgaaca agattaatta cctgtcttcc tgtttctcaa gaatatttac 1150 gtagtttttc ataggtctgt ttttcctttc atgcctctta aaaacttctg 1200 tgcttacata aacatactta aaaggttttc tttaagatat tttatttttc 1250 catttaaagg tggacaaaag ctacctccct aaaagtaaat acaaagagaa 1300 cttatttaca cagggaaggt ttaagactgt tcaagtagca ttccaatctg 1350 tagccatgcc acagaatatc aacaagaaca cagaatgagt gcacagctaa 1400 qaqatcaaqt ttcaqcaqqc aqctttatct caacctggac atattttaag 1450 attcagcatt tgaaagattt ccctagcctc ttcctttttc attagcccaa 1500 aacggtgcaa ctctattctg gactttatta cttgattctg tcttctgtat 1550 aactctgaag tccaccaaaa gtggaccctc tatatttcct ccctttttat 1600 agtettataa gatacattat gaaaggtgac egactetatt ttaaatetea 1650 gaattttaag ttctagcccc atgataacct ttttctttgt aatttatgct 1700 ttcatatatc cttggtccca gagatgttta gacaatttta ggctcaaaaa 1750 ttaaagctaa cacaggaaaa ggaactgtac tggctattac ataagaaaca 1800 atggacccaa gagaagaa 1818

<210> 464

<211> 300

<212> PRT

<213> Homo sapiens

<400> 464

Met Asn Ile Ile Leu Glu Ile Leu Leu Leu Leu Ile Thr Ile Ile
1 5 10 15

Tyr Ser Tyr Leu Glu Ser Leu Val Lys Phe Phe Ile Pro Gln Arg 20 25 30 Arg Lys Ser Val Ala Gly Glu Ile Val Leu Ile Thr Gly Ala Gly His Gly Ile Gly Arq Gln Thr Thr Tyr Glu Phe Ala Lys Arg Gln Ser Ile Leu Val Leu Trp Asp Ile Asn Lys Arg Gly Val Glu Glu Thr Ala Ala Glu Cys Arg Lys Leu Gly Val Thr Ala His Ala Tyr Val Val Asp Cys Ser Asn Arg Glu Glu Ile Tyr Arg Ser Leu Asn Gln Val Lys Lys Glu Val Gly Asp Val Thr Ile Val Val Asn Asn 115 120 Ala Gly Thr Val Tyr Pro Ala Asp Leu Leu Ser Thr Lys Asp Glu Glu Ile Thr Lys Thr Phe Glu Val Asn Ile Leu Gly His Phe Trp 150 Ile Thr Lys Ala Leu Leu Pro Ser Met Met Glu Arg Asn His Gly His Ile Val Thr Val Ala Ser Val Cys Gly His Glu Gly Ile Pro Tyr Leu Ile Pro Tyr Cys Ser Ser Lys Phe Ala Ala Val Gly Phe His Arg Gly Leu Thr Ser Glu Leu Gln Ala Leu Gly Lys Thr Gly 210 Ile Lys Thr Ser Cys Leu Cys Pro Val Phe Val Asn Thr Gly Phe Thr Lys Asn Pro Ser Thr Arg Leu Trp Pro Val Leu Glu Thr Asp 230 240 Glu Val Val Arg Ser Leu Ile Asp Gly Ile Leu Thr Asn Lys Lys Met Ile Phe Val Pro Ser Tyr Ile Asn Ile Phe Leu Arg Leu Gln 270 Lys Phe Leu Pro Glu Arg Ala Ser Ala Ile Leu Asn Arg Met Gln Asn Ile Gln Phe Glu Ala Val Val Gly His Lys Ile Lys Met Lys 295 300

<210> 465

<211> 1547

<212> DNA

<213> Homo sapiens

<400> 465

cggcggcggc tgcgggcgcg aggtgagggg cgcgaggtga ggggcgcgag 50 gttcccagca ggatgccccg gctctgcagg aagctgaagt gagaggcccg 100 gagagggccc agcccgcccg gggcaggatg accaaggccc ggctgttccg 150 gctgtggctg gtgctggggt cggtgttcat gatcctgctg atcatcgtgt 200 actgggacag cgcaggcgcc gcgcacttct acttgcacac gtccttctct 250 aggeegeaca eggggeegee getgeecaeg eeegggeegg acagggaeag 300 ggageteacg geegacteeg atgtegaega gtttetggae aagtttetea 350 gtgctggcgt gaagcagagc gaccttccca gaaaggagac ggagcagccg 400 cctgcgccgg ggagcatgga ggagagcgtg agaggctacg actggtcccc 450 gegegaegee eggegeagee eagaeeaggg eeggeageag geggagegga 500 ggagcgtgct gcggggcttc tgcgccaact ccagcctggc cttccccacc 550 aaggagcgcg cattcgacga catccccaac tcggagctga gccacctgat 600 cgtggacgac cggcacgggg ccatctactg ctacgtgccc aaggtggcct 650 gcaccaactg gaagcgcgtg atgatcgtgc tgagcggaag cctgctgcac 700 cgcggtgcgc cctaccgcga cccgctgcgc atcccgcgcg agcacgtgca 750 caacgccage gegeacetga cetteaacaa gttetggege egetaeggga 800 ageteteceg ceaceteatg aaggteaage teaagaagta caccaagtte 850 ctcttcgtgc gcgacccctt cgtgcgcctg atctccgcct tccgcagcaa 900 gttcgagctg gagaacgagg agttctaccg caagttcgcc gtgcccatgc 950 tgcggctgta cgccaaccac accagcctgc ccgcctcggc gcgcgaggcc 1000 ttccgcgctg gcctcaaggt gtccttcgcc aacttcatcc agtacctgct 1050 ggacccgcac acggagaagc tggcgccctt caacgagcac tggcggcagg 1100 tgtaccgcct ctgccacccg tgccagatcg actacgactt cgtggggaag 1150 ctggagactc tggacgagga cgccgcgcag ctgctgcagc tactccaggt 1200 ggaceggeag etecgettee eecegageta eeggaacagg acegeeagea 1250 gctgggagga ggactggttc gccaagatcc ccctggcctg gaggcagcag 1300 ctgtataaac tctacgaggc cgactttgtt ctcttcggct accccaagcc 1350 cgaaaacctc ctccgagact gaaagctttc gcgttgcttt ttctcgcgtg 1400 cctggaacct gacgcacgcg cactccagtt tttttatgac ctacgatttt 1450

gcaatctggg cttcttgttc actccactgc ctctatccat tgagtactgt 1500 atcgatattg ttttttaaga ttaatatatt tcaggtattt aatacga 1547

<210> 466

<211> 414

<212> PRT

<213> Homo sapiens

<400> 466

Met Thr Lys Ala Arg Leu Phe Arg Leu Trp Leu Val Leu Gly Ser 1 5 10 15

Val Phe Met Ile Leu Leu Ile Ile Val Tyr Trp Asp Ser Ala Gly
20 25 30

Ala Ala His Phe Tyr Leu His Thr Ser Phe Ser Arg Pro His Thr 35 40 45

Gly Pro Pro Leu Pro Thr Pro Gly Pro Asp Arg Asp Arg Glu Leu
50 55 60

Thr Ala Asp Ser Asp Val Asp Glu Phe Leu Asp Lys Phe Leu Ser 65 70 75

Ala Gly Val Lys Gln Ser Asp Leu Pro Arg Lys Glu Thr Glu Gln
80 85 90

Pro Pro Ala Pro Gly Ser Met Glu Glu Ser Val Arg Gly Tyr Asp 95 100 105

Trp Ser Pro Arg Asp Ala Arg Arg Ser Pro Asp Gln Gly Arg Gln
110 115 120

Gln Ala Glu Arg Arg Ser Val Leu Arg Gly Phe Cys Ala Asn Ser 125 130 135

Ser Leu Ala Phe Pro Thr Lys Glu Arg Ala Phe Asp Asp Ile Pro 140 145 150

Asn Ser Glu Leu Ser His Leu Ile Val Asp Asp Arg His Gly Ala 155 160 165

Ile Tyr Cys Tyr Val Pro Lys Val Ala Cys Thr Asn Trp Lys Arg 170 175 180

Val Met Ile Val Leu Ser Gly Ser Leu Leu His Arg Gly Ala Pro 185 190 195

Tyr Arg Asp Pro Leu Arg Ile Pro Arg Glu His Val His Asn Ala 200 205 210

Ser Ala His Leu Thr Phe Asn Lys Phe Trp Arg Arg Tyr Gly Lys 215 220 225

Leu Ser Arg His Leu Met Lys Val Lys Leu Lys Lys Tyr Thr Lys 230 235 240

Phe Leu Phe Val Arg Asp Pro Phe Val Arg Leu Ile Ser Ala Phe 245 250 Arg Ser Lys Phe Glu Leu Glu Asn Glu Glu Phe Tyr Arg Lys Phe Ala Val Pro Met Leu Arg Leu Tyr Ala Asn His Thr Ser Leu Pro Ala Ser Ala Arg Glu Ala Phe Arg Ala Gly Leu Lys Val Ser Phe 300 Ala Asn Phe Ile Gln Tyr Leu Leu Asp Pro His Thr Glu Lys Leu 305 Ala Pro Phe Asn Glu His Trp Arg Gln Val Tyr Arg Leu Cys His 320 330 Pro Cys Gln Ile Asp Tyr Asp Phe Val Gly Lys Leu Glu Thr Leu 335 340 Asp Glu Asp Ala Ala Gln Leu Leu Gln Leu Leu Gln Val Asp Arg 350 355 360 Gln Leu Arg Phe Pro Pro Ser Tyr Arg Asn Arg Thr Ala Ser Ser 365 370 Trp Glu Glu Asp Trp Phe Ala Lys Ile Pro Leu Ala Trp Arg Gln 380 390 Gln Leu Tyr Lys Leu Tyr Glu Ala Asp Phe Val Leu Phe Gly Tyr 395 400 405

Pro Lys Pro Glu Asn Leu Leu Arg Asp 410

<210> 467

<211> 1071

<212> DNA

<213> Homo sapiens

<400> 467

tegggecaga atteggeacg aggeggeacg agggegacgg ceteaegggg 50 ctttggaggt gaaagaggee cagagtagag agaagagag accgaegtae 100 acgggatgge tacgggaacg egetatgeeg ggaaggtggt ggtegtgace 150 ggggggegge geggeategg agetgggate gtgegegeet tegtgaacag 200 eggggecega gtggttatet gegacaagga tgagtetggg ggeegggeee 250 tggageagga geteettga getgtetta teetetgtga tgtgaeteag 300 gaagatgatg tgaagaecet ggtttetgag accateegee gatttggeeg 350 eetggattgt gttgteaaca aegetggeea ceaeceaece ceaeagagge 400

ctgaggagac ctctgccag ggattccgcc agctgctgga gctgaaccta 450 ctggggacgt acaccttgac caagctcgcc ctccctacc tgcggaagag 500 tcaagggaat gtcatcaaca tctccagcct ggtgggggca atcggccagg 550 cccaggcagt tccctatgtg gccaccaagg gggcagtaac agccatgacc 600 aaagctttgg ccctggatga aagtccatat ggtgtccgag tcaactgtat 650 ctcccagga aacatctgga ccccgctgtg ggaggagctg gcagccttaa 700 tgccagaccc tagggccaca atccgagagg gcatgctggc ccagccactg 750 ggccgcatgg gccagcccgc tgaggtcgg gctgcggcag tgttcctggc 800 ctccgaagcc aacttctgca cgggcattga actgctcgt acggggggtg 850 cagagctggg gtacgggtg aaggccagtc ggagcaccc cgtggacgcc 900 cccgatatcc cttcctgatt tctctcattt ctacttggg ccccctacc 950 aggactctcc caccccaaac tccaacctgt atcagatgca gcccccaagc 1000 ccttagactc taagcccagt tagcaaggtg ccgggtcacc ctgcaggttc 1050 ccataaaaac gatttgcagc c 1071

<210> 468

<211> 270

<212> PRT

<213> Homo sapiens

<400> 468

Met Ala Thr Gly Thr Arg Tyr Ala Gly Lys Val Val Val Thr 1 5 10 15

Gly Gly Gly Arg Gly Ile Gly Ala Gly Ile Val Arg Ala Phe Val 20 25 30

Asn Ser Gly Ala Arg Val Val Ile Cys Asp Lys Asp Glu Ser Gly 35 40 45

Gly Arg Ala Leu Glu Gln Glu Leu Pro Gly Ala Val Phe Ile Leu
50 55 60

Cys Asp Val Thr Gln Glu Asp Asp Val Lys Thr Leu Val Ser Glu 65 70 75

Thr Ile Arg Arg Phe Gly Arg Leu Asp Cys Val Val Asn Asn Ala 80 85 90

Gly His His Pro Pro Pro Gln Arg Pro Glu Glu Thr Ser Ala Gln 95 100 105

Gly Phe Arg Gln Leu Leu Glu Leu Asn Leu Leu Gly Thr Tyr Thr 110 115 120

Leu Thr Lys Leu Ala Leu Pro Tyr Leu Arg Lys Ser Gln Gly Asn 125 130 Val Ile Asn Ile Ser Ser Leu Val Gly Ala Ile Gly Gln Ala Gln 140 Ala Val Pro Tyr Val Ala Thr Lys Gly Ala Val Thr Ala Met Thr 155 Lys Ala Leu Ala Leu Asp Glu Ser Pro Tyr Gly Val Arg Val Asn 170 Cys Ile Ser Pro Gly Asn Ile Trp Thr Pro Leu Trp Glu Glu Leu 185 190 Ala Ala Leu Met Pro Asp Pro Arg Ala Thr Ile Arg Glu Gly Met 210 Leu Ala Gln Pro Leu Gly Arg Met Gly Gln Pro Ala Glu Val Gly Ala Ala Val Phe Leu Ala Ser Glu Ala Asn Phe Cys Thr Gly 230 240 Ile Glu Leu Leu Val Thr Gly Gly Ala Glu Leu Gly Tyr Gly Cys Lys Ala Ser Arg Ser Thr Pro Val Asp Ala Pro Asp Ile Pro Ser

<210> 469

<211> 687

<212> DNA

<213> Homo sapiens

<400> 469

aggegggaag cagetgeagg etgacettge agettggegg aatggaetgg 50 ceteacaace tgetgttet tettaceatt tecatettee tggggetggg 100 ceageceagg agececaaaa geaagaggaa ggggeaaggg eggeetggge 150 ceetggeee tggeeeteae eaggtgeeae tggaeetggt gteaeggatg 200 aaacegtatg ecegeatgga ggagtatgag aggaacateg aggagatggt 250 ggeeeagetg aggaacaget eagagetgge ecagagaaag tgtgaggtea 300 aettgeaget gteggatgtee aacaagagga geetgtetee etggggetae 350 ageateaace aegaeeeag eegtateeee gtggaeetge eggaggeaeg 400 gtgeetgtg etgggetgt tgaaeeeett eaceatgeag gaggaeegea 450 geatggtga egtgeeggtg tteageeagg tteetgtge eegeegeete 500 tgeeegeeae eggeeegeae agggeettge eggeagegg eagteatgga 550

270

gaccateget gtgggetgea cetgeatett etgaateace tggeecagaa 600 geeaggeeag cageeegaga ceateeteet tgeacetttg tgeeaagaaa 650 ggeetatgaa aagtaaacae tgaettttga aageaag 687

<210> 470

<211> 180

<212> PRT

<213> Homo sapiens

<400> 470

Met Asp Trp Pro His Asn Leu Leu Phe Leu Leu Thr Ile Ser Ile 1 5 10 15

Phe Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys
20 25 30

Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val 35 40 45

Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu 50 55 60

Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn
65 70 75

Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu 80 85 90

Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile 95 100 105

Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg 110 115 120

Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp 125 130 135

Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg 140 145 150

Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln
155 160 165

Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe 170 175 180

<210> 471

<211> 2368

<212> DNA

<213> Homo sapiens

<400> 471

gegeegeeag gegtaggegg ggtggeeett gegteteeeg etteettgaa 50 aaaceeggeg ggegagegag getgegggee ggeegetgee etteeeeaca 100

ctccccgccg agaagcctcg ctcggcgccc aacatggcgg gtgggcgctg 150 cggcccgcag ctaacggcgc tcctggccgc ctggatcgcg gctgtggcgg 200 cgacggcagg ccccgaggag gccgcgctgc cgccggagca gagccgggtc 250 cagcccatga ccgcctccaa ctggacgctg gtgatggagg gcgagtggat 300 gctgaaattt tacgccccat ggtgtccatc ctgccagcag actgattcag 350 aatgggaggc ttttgcaaag aatggtgaaa tacttcagat cagtgtgggg 400 aaggtagatg tcattcaaga accaggtttg agtggccgct tctttgtcac 450 cactetecea geattttte atgeaaagga tgggatatte egeegttate 500 gtggcccagg aatcttcgaa gacctgcaga attatatctt agagaagaaa 550 tggcaatcag tcgagcctct gactggctgg aaatccccag cttctctaac 600 gatgtctgga atggctggtc tttttagcat ctctggcaag atatggcatc 650 ttcacaacta tttcacagtg actcttggaa ttcctgcttg gtgttcttat 700 gtgtttttcg tcatagccac cttggttttt ggccttttta tgggtctggt 750 cttggtggta atatcagaat gtttctatgt gccacttcca aggcatttat 800 ctgagcgttc tgagcagaat cggagatcag aggaggctca tagagctgaa 850 cagttgcagg atgcggagga ggaaaaagat gattcaaatg aagaagaaaa 900 caaagacagc cttgtagatg atgaagaaga gaaagaagat cttggcgatg 950 aggatgaagc agaggaagaa gaggaggagg acaacttggc tgctggtgtg 1000 gatgaggaga gaagtgaggc caatgatcag gggcccccag gagaggacgg 1050 tgtgacccgg gaggaagtag agcctgagga ggctgaagaa ggcatctctg 1100 agcaaccctg cccagctgac acagaggtgg tggaagactc cttgaggcag 1150 cgtaaaagtc agcatgctga caagggactg tagatttaat gatgcgtttt 1200 caagaataca caccaaaaca atatgtcagc ttccctttgg cctgcagttt 1250 gtaccaaatc cttaattttt cctgaatgag caagcttctc ttaaaagatg 1300 ctctctagtc atttggtctc atggcagtaa gcctcatgta tactaaggag 1350 agtcttccag gtgtgacaat caggatatag aaaaacaaac gtagtgttgg 1400 gatctgtttg gagactggga tgggaacaag ttcatttact taggggtcag 1450 agagtetega ecagaggagg ceatteceag tectaateag eacetteeag 1500 agacaaggct gcaggccctg tgaaatgaaa gccaagcagg agccttggct 1550

cctgagcatc cccaaagtgt aacgtagaag ccttgcatcc ttttcttgtg 1600 taaagtattt atttttgtca aattgcagga aacatcaggc accacagtgc 1650 atgaaaaatc tttcacagct agaaattgaa agggccttgg gtatagagag 1700 cageteagaa qteateecag ceetetgaat eteetgtget atgttttatt 1750 tettacettt aattitteea geattteeae eatgggeatt eaggetetee 1800 acactettea etattatete ttggteagag gaeteeaata acageeaggt 1850 ttacatgaac tgtgtttgtt cattctgacc taaggggttt agataatcag 1900 taaccataac ccctgaagct gtgactgcca aacatctcaa atgaaatgtt 1950 gtggccatca gagactcaaa aggaagtaag gattttacaa gacagattaa 2000 aaaaaaattg ttttgtccaa aatatagttg ttgttgattt ttttttaagt 2050 tttctaagca atattttca agccagaagt cctctaagtc ttgccagtac 2100 aaggtagtet tgtgaagaaa agttgaatac tgttttgttt tcatctcaag 2150 gggttccctg ggtcttgaac tactttaata ataactaaaa aaccacttct 2200 gattttcctt cagtgatgtg cttttggtga aagaattaat gaactccagt 2250 acctgaaagt gaaagatttg attttgtttc catcttctgt aatcttccaa 2300 agaattatat ctttgtaaat ctctcaatac tcaatctact gtaagtaccc 2350 agggaggcta atttcttt 2368

<210> 472

<211> 349

<212> PRT

<213> Homo sapiens

<400> 472

Met Ala Gly Gly Arg Cys Gly Pro Gln Leu Thr Ala Leu Leu Ala 1 5 10 15

Ala Trp Ile Ala Ala Val Ala Ala Thr Ala Gly Pro Glu Glu Ala 20 25 30

Ala Leu Pro Pro Glu Gln Ser Arg Val Gln Pro Met Thr Ala Ser 35 40 45

Asn Trp Thr Leu Val Met Glu Gly Glu Trp Met Leu Lys Phe Tyr 50 55 60

Ala Pro Trp Cys Pro Ser Cys Gln Gln Thr Asp Ser Glu Trp Glu
65 70 75

Val	Asp	Val	Ile	Gln 95	Glu	Pro	Gly	Leu	Ser 100	Gly	Arg	Phe	Phe	Val 105
Thr	Thr	Leu	Pro	Ala 110	Phe	Phe	His	Ala	Lys 115	Asp	Gly	Ile	Phe	Arg 120
Arg	Tyr	Arg	Gly	Pro 125	Gly	Ile	Phe	Glu	Asp 130	Leu	Gln	Asn	Tyr	Ile 135
Leu	Glu	Lys	Lys	Trp 140	Gln	Ser	Val	Glu	Pro 145	Leu	Thr	Gly	Trp	Lys 150
Ser	Pro	Ala	Ser	Leu 155	Thr	Met	Ser	Gly	Met 160	Ala	Gly	Leu	Phe	Ser 165
Ile	Ser	Gly	Lys	Ile 170	Trp	His	Leu	His	Asn 175	Tyr	Phe	Thr	Val	Thr 180
Leu	Gly	Ile	Pro	Ala 185	Trp	Cys	Ser	Tyr	Val 190	Phe	Phe	Val	Ile	Ala 195
Thr	Leu	Val	Phe	Gly 200	Leu	Phe	Met	Gly	Leu 205	Val	Leu	Val	Val	Ile 210
Ser	Glu	Cys	Phe	Tyr 215	Val	Pro	Leu	Pro	Arg 220	His	Leu	Ser	Glu	Arg 225
Ser	Glu	Gln	Asn	Arg 230	Arg	Ser	Glu	Glu	Ala 235	His	Arg	Ala	Glu	Gln 240
Leu	Gln	Asp	Ala	Glu 245	Glu	Glu	Lys	Asp	Asp 250	Ser	Asn	Glu	Glu	Glu 255
Asn	Lys	Asp	Ser	Leu 260	Val	Asp	Asp	Glu	Glu 265	Glu	Lys	Glu	Asp	Leu 270
Gly	Asp	Glu	Asp	Glu 275	Ala	Glu	Glu	Glu	Glu 280	Glu	Glu	Asp	Asn	Leu 285
Ala	Ala	Gly	Val	Asp 290	Glu	Glu	Arg	Ser	Glu 295	Ala	Asn	Asp	Gln	Gly 300
Pro	Pro	Gly	Glu	Asp 305	Gly	Val	Thr	Arg	Glu 310	Glu	Val	Glu	Pro	Glu 315
Glu	Ala	Glu	Glu	Gly 320	Ile	Ser	Glu	Gln	Pro 325	Cys	Pro	Ala	Asp	Thr 330
Glu	Val	Val	Glu	Asp 335	Ser	Leu	Arg	Gln	Arg 340	Lys	Ser	Gln	His	Ala 345

Asp Lys Gly Leu

<210> 473 <211> 24 <212> DNA <213> Artificial Sequence

```
<220>
<223> Synthetic oligonucleotide probe
<400> 473
 gtccagccca tgaccgcctc caac 24
<210> 474
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 474
 ctctcctcat ccacaccagc agcc 24
<210> 475
<211> 44
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 475
 gtggatgctg aaattttacg ccccatggtg tccatcctgc cagc 44
<210> 476
<211> 2478
<212> DNA
<213> Homo sapiens
<400> 476
 atctggttga actacttaag cttaatttgt taaactccgg taagtaccta 50
 gcccacatga tttgactcag agattctctt ttgtccacag acagtcatct 100
 caggggcaga aagaaaagag ctcccaaatg ctatatctat tcaggggctc 150
 tcaagaacaa tggaatatca tcctgattta gaaaatttgg atgaagatgg 200
 atatactcaa ttacacttcg actctcaaag caataccagg atagctgttg 250
 tttcagagaa aggatcgtgt gctgcatctc ctccttggcg cctcattgct 300
 gtaattttgg gaatcctatg cttggtaata ctggtgatag ctgtggtcct 350
 gggtaccatg ggggttcttt ccagcccttg tcctcctaat tggattatat 400
 atgagaagag ctgttatcta ttcagcatgt cactaaattc ctgggatgga 450
 agtaaaagac aatgctggca actgggctct aatctcctaa agatagacag 500
 ctcaaatgaa ttgggattta tagtaaaaca agtgtcttcc caacctgata 550
 attcattttq gataggcctt tctcggcccc agactgaggt accatggctc 600
```

tgggaggatg gatcaacatt ctcttctaac ttatttcaga tcagaaccac 650 agctacccaa gaaaacccat ctccaaattg tgtatggatt cacgtgtcag 700 tcatttatga ccaactgtgt agtgtgccct catatagtat ttgtgagaag 750 aagttttcaa tgtaagagga agggtggaga aggagagaga aatatgtgag 800 gtagtaagga ggacagaaaa cagaacagaa aagagtaaca gctgaggtca 850 agataaatgc agaaaatgtt tagagagctt ggccaactgt aatcttaacc 900 aagaaattga agggagaggc tgtgatttct gtatttgtcg acctacaggt 950 aggctagtat tatttttcta gttagtagat ccctagacat ggaatcaggg 1000 cagccaagct tgagttttta tttttattt atttatttt ttgagatagg 1050 gtctcacttt gttacccagg ctggagtgca gtggcacaat ctcgactcac 1100 tgcagctatc tctcgcctca gcccctcaag tagctgggac tacaggtgca 1150 tgccaccatg ccaggctaat ttttggtgtt ttttgtagag actgggtttt 1200 gccatgttga ccaagctggt ctctaactcc tgggcttaag tgatctgccc 1250 gccttggcct cccaaagtgc tgggattaca gatgtgagcc accacacctg 1300 gccccaagct tgaattttca ttctgccatt gacttggcat ttaccttggg 1350 taagccataa gcgaatctta atttctggct ctatcagagt tgtttcatgc 1400 tcaacaatgc cattgaagtg cacggtgtgt tgccacgatt tgaccctcaa 1450 cttctagcag tatatcagtt atgaactgag ggtgaaatat atttctgaat 1500 agctaaatga agaaatggga aaaaatcttc accacagtca gagcaatttt 1550 attattttca tcagtatgat cataattatg attatcatct tagtaaaaag 1600 caggaactcc tacttttct ttatcaatta aatagctcag agagtacatc 1650 tgccatatct ctaatagaat ctttttttt tttttttt tttttttt tttgagacag 1700 agtttcgctc ttgttgccca ggctggagtg caacggcacg atctcggctc 1750 accgcaacct ccgcccctg ggttcaagca attctcctgc ctcagcctcc 1800 caagtagctg ggattacagt caggcaccac cacacccggc taattttgta 1850 tttttttagt agagacaggg tttctccatg tcggtcaggg tagtcccgaa 1900 ctcctgacct caagtgatct gcctgcctcg gcctcccaag tgctgggatt 1950 acaggcgtga gccactgcac ccagcctaga atcttgtata atatgtaatt 2000 gtagggaaac tgctctcata ggaaagtttt ctgcttttta aatacaaaaa 2050

<210> 477

<211> 201

<212> PRT

<213> Homo sapiens

<400> 477

Met Glu Tyr His Pro Asp Leu Glu Asn Leu Asp Glu Asp Gly Tyr
1 5 10 15

Thr Gln Leu His Phe Asp Ser Gln Ser Asn Thr Arg Ile Ala Val 20 25 30

Val Ser Glu Lys Gly Ser Cys Ala Ala Ser Pro Pro Trp Arg Leu 35 40 45

Ile Ala Val Ile Leu Gly Ile Leu Cys Leu Val Ile Leu Val Ile 50 55 60

Ala Val Val Leu Gly Thr Met Gly Val Leu Ser Ser Pro Cys Pro 65 70 75

Pro Asn Trp Ile Ile Tyr Glu Lys Ser Cys Tyr Leu Phe Ser Met 80 85 90

Ser Leu Asn Ser Trp Asp Gly Ser Lys Arg Gln Cys Trp Gln Leu 95 100 105

Gly Ser Asn Leu Leu Lys Ile Asp Ser Ser Asn Glu Leu Gly Phe 110 115 120

Ile Val Lys Gln Val Ser Ser Gln Pro Asp Asn Ser Phe Trp Ile 125 130 135

Gly Leu Ser Arg Pro Gln Thr Glu Val Pro Trp Leu Trp Glu Asp 140 145 150

Gly Ser Thr Phe Ser Ser Asn Leu Phe Gln Ile Arg Thr Thr Ala 155 160 165

Thr Gln Glu Asn Pro Ser Pro Asn Cys Val Trp Ile His Val Ser

```
Val Ile Tyr Asp Gln Leu Cys Ser Val Pro Ser Tyr Ser Ile Cys
185 190 195
```

Glu Lys Lys Phe Ser Met 200

<210> 478

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 478

gtccacagac agtcatctca ggagcag 27

<210> 479

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 479

acaagtgtct tcccaacctg 20

<210> 480

<211> 24

<212> DNA

<213> Artificial Sequence

(220>

<223> Synthetic oligonucleotide probe

<400> 480

atcctcccag agccatggta cctc 24

<210> 481

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 481

ccaaggatag ctgttgtttc agagaaagga tcgtgtgctg catctcctcc 50

t 51

<210> 482

<211> 3819

<212> DNA

<213> Homo sapiens

<400> 482 ggaaggggag gagcaggcca cacaggcaca ggccggtgag ggacctgccc 50 agacctggag ggtctcgctc tgtcacacag gctggagtgc agtggtgtga 100 tettggetca tegtaacete caceteeegg gtteaagtga tteteatgee 150 tcagcctccc gagtagctgg gattacaggt ggtgacttcc aagagtgact 200 ccgtcggagg aaaatgactc cccagtcgct gctgcagacg acactgttcc 250 tgctgagtct gctcttcctg gtccaaggtg cccacggcag gggccacagg 300 gaagactttc gcttctgcag ccagcggaac cagacacaca ggagcagcct 350 ccactacaaa cccacaccag acctgcgcat ctccatcgag aactccgaag 400 aggccctcac agtccatgcc cctttccctg cagcccaccc tgcttcccga 450 tccttccctg accccagggg cctctaccac ttctgcctct actggaaccg 500 acatgctggg agattacatc ttctctatgg caagcgtgac ttcttgctga 550 gtgacaaagc ctctagcctc ctctgcttcc agcaccagga ggagagcctg 600 gctcagggcc ccccgctgtt agccacttct gtcacctcct ggtggagccc 650 tcagaacatc agcctgccca gtgccgccag cttcaccttc tccttccaca 700 gtcctcccca cacggccgct cacaatgcct cggtggacat gtgcgagctc 750 aaaagggacc tccagctgct cagccagttc ctgaagcatc cccagaaggc 800 ctcaaggagg cecteggetg eeceegecag ceageagttg cagageetgg 850 agtcgaaact gacctctgtg agattcatgg gggacatggt gtccttcgag 900 gaggaccgga tcaacgccac ggtgtggaag ctccagccca cagccggcct 950 ccaggacctg cacatccact cccggcagga ggaggagcag agcgagatca 1000 tggagtactc ggtgctgctg cctcgaacac tcttccagag gacgaaaggc 1050 cggagcgggg aggctgagaa gagactcctc ctggtggact tcagcagcca 1100 agccctgttc caggacaaga attccagcca agtcctgggt gagaaggtct 1150 tggggattgt ggtacagaac accaaagtag ccaacctcac ggagcccgtg 1200 gtgctcactt tccagcacca gctacagccg aagaatgtga ctctgcaatg 1250 tgtgttctgg gttgaagacc ccacattgag cagcccgggg cattggagca 1300 gtgctgggtg tgagaccgtc aggagagaaa cccaaacatc ctgcttctgc 1350 aaccacttga cctactttgc agtgctgatg gtctcctcgg tggaggtgga 1400 cgccgtgcac aagcactacc tgagcctcct ctcctacgtg ggctgtgtcg 1450

tetetgeect ggeetgeett gteaceattg cegeetacet etgeteeagg 1500 gtgcccctgc cgtgcaggag gaaacctcgg gactacacca tcaaggtgca 1550 catgaacctg ctgctggccg tcttcctgct ggacacgagc ttcctgctca 1600 gegageeggt ggeeetgaca ggetetgagg etggetgeeg ageeagtgee 1650 atcttcctgc acttctccct gctcacctgc ctttcctgga tgggcctcga 1700 ggggtacaac ctctaccgac tcgtggtgga ggtctttggc acctatgtcc 1750 ctggctacct actcaagctg agcgccatgg gctggggctt ccccatcttt 1800 ctggtgacgc tggtggccct ggtggatgtg gacaactatg gccccatcat 1850 cttggctgtg cataggactc cagagggcgt catctaccct tccatgtgct 1900 ggatccggga ctccctggtc agctacatca ccaacctggg cctcttcagc 1950 ctggtgtttc tgttcaacat ggccatgcta gccaccatgg tggtgcagat 2000 cctgcggctg cgccccaca cccaaaagtg gtcacatgtg ctgacactgc 2050 tgggcctcag cctggtcctt ggcctgccct gggccttgat cttcttctcc 2100 tttgcttctg gcaccttcca gcttgtcgtc ctctaccttt tcagcatcat 2150 cacctccttc caaggettcc tcatcttcat ctggtactgg tccatgcggc 2200 tgcaggcccg gggtggcccc tcccctctga agagcaactc agacagcgcc 2250 aggetececa teageteggg cageaceteg tecageegea tetaggeete 2300 cageceacet geceatgtga tgaageagag atgeggeete gtegeacaet 2350 gcctgtggcc cccgagccag gcccagcccc aggccagtca gccgcagact 2400 ttggaaagcc caacgaccat ggagagatgg gccgttgcca tggtggacgg 2450 actcccgggc tgggcttttg aattggcctt ggggactact cggctctcac 2500 tcagctccca cgggactcag aagtgcgccg ccatgctgcc tagggtactg 2550 tccccacatc tgtcccaacc cagctggagg cctggtctct ccttacaacc 2600 cctgggccca gccctcattg ctgggggcca ggccttggat cttgagggtc 2650 tggcacatcc ttaatcctgt gcccctgcct gggacagaaa tgtggctcca 2700 gttgctctgt ctctcgtggt caccctgagg gcactctgca tcctctgtca 2750 ttttaacctc aggtggcacc cagggcgaat ggggcccagg gcagaccttc 2800 agggccagag ccctggcgga ggagaggccc tttgccagga gcacagcagc 2850 agetegeeta cetetgagee caggeeceet cectecetea geeceecagt 2900

cctccctcca tcttccctgg ggttctcctc ctctcccagg gcctccttgc 2950 tccttcgttc acagctgggg gtccccgatt ccaatgctgt tttttgggga 3000 gtggtttcca ggagctgcct ggtgtctgct gtaaatgttt gtctactgca 3050 caaqcetegg cetgeeetg agecaggete ggtacegatg egtgggetgg 3100 gctaggtccc tctgtccatc tgggcctttg tatgagctgc attgcccttg 3150 ctcaccctga ccaagcacac gcctcagagg ggccctcagc ctctcctgaa 3200 gccctcttgt ggcaagaact gtggaccatg ccagtcccgt ctggtttcca 3250 teccaecaet ecaaggaetg agaetgaeet eetetggtga eaetggeeta 3300 gagectgaca etetectaag aggttetete caageceeca aatageteea 3350 ggcgccctcg gccgcccatc atggttaatt ctgtccaaca aacacacacg 3400 ggtagattgc tggcctgttg taggtggtag ggacacagat gaccgacctg 3450 gtcactcctc ctgccaacat tcagtctggt atgtgaggcg tgcgtgaagc 3500 aagaactcct ggagctacag ggacagggag ccatcattcc tgcctgggaa 3550 teetggaaga etteetgeag gagteagegt teaatettga eettgaagat 3600 gggaaggatg ttctttttac gtaccaattc ttttgtcttt tgatattaaa 3650 aagaagtaca tgttcattgt agagaatttg gaaactgtag aagagaatca 3700 aaaaaaaaaa aaaaaaaaa 3819

<210> 483

<211> 693

<212> PRT

<213> Homo sapiens

<400> 483

Met Thr Pro Gln Ser Leu Leu Gln Thr Thr Leu Phe Leu Leu Ser 1 5 10 15

Leu Leu Phe Leu Val Gln Gly Ala His Gly Arg Gly His Arg Glu 20 25 30

Asp Phe Arg Phe Cys Ser Gln Arg Asn Gln Thr His Arg Ser Ser 35 40 45

Leu His Tyr Lys Pro Thr Pro Asp Leu Arg Ile Ser Ile Glu Asn 50 55 60

Ser Glu Glu Ala Leu Thr Val His Ala Pro Phe Pro Ala Ala His 65 70 75

Pro Ala Ser Arg Ser Phe Pro Asp Pro Arg Gly Leu Tyr His Phe Cys Leu Tyr Trp Asn Arg His Ala Gly Arg Leu His Leu Leu Tyr Gly Lys Arg Asp Phe Leu Leu Ser Asp Lys Ala Ser Ser Leu Leu 110 Cys Phe Gln His Gln Glu Glu Ser Leu Ala Gln Gly Pro Pro Leu 125 130 Leu Ala Thr Ser Val Thr Ser Trp Trp Ser Pro Gln Asn Ile Ser 140 Leu Pro Ser Ala Ala Ser Phe Thr Phe Ser Phe His Ser Pro Pro 155 His Thr Ala Ala His Asn Ala Ser Val Asp Met Cys Glu Leu Lys 170 Arg Asp Leu Gln Leu Leu Ser Gln Phe Leu Lys His Pro Gln Lys 185 Ala Ser Arg Arg Pro Ser Ala Ala Pro Ala Ser Gln Gln Leu Gln Ser Leu Glu Ser Lys Leu Thr Ser Val Arg Phe Met Gly Asp Met 215 Val Ser Phe Glu Glu Asp Arg Ile Asn Ala Thr Val Trp Lys Leu Gln Pro Thr Ala Gly Leu Gln Asp Leu His Ile His Ser Arg Gln Glu Glu Glu Gln Ser Glu Ile Met Glu Tyr Ser Val Leu Leu Pro Arg Thr Leu Phe Gln Arg Thr Lys Gly Arg Ser Gly Glu Ala Glu 275 Lys Arg Leu Leu Val Asp Phe Ser Ser Gln Ala Leu Phe Gln Asp Lys Asn Ser Ser Gln Val Leu Gly Glu Lys Val Leu Gly Ile 315 Val Val Gln Asn Thr Lys Val Ala Asn Leu Thr Glu Pro Val Val Leu Thr Phe Gln His Gln Leu Gln Pro Lys Asn Val Thr Leu Gln 335 Cys Val Phe Trp Val Glu Asp Pro Thr Leu Ser Ser Pro Gly His Trp Ser Ser Ala Gly Cys Glu Thr Val Arg Arg Glu Thr Gln Thr

				365					370					375
Ser	Cys	Phe	Cys	Asn 380	His	Leu	Thr	Tyr	Phe 385	Ala	Val	Leu	Met	Val 390
Ser	Ser	Val	Glu	Val 395	Asp	Ala	Val	His	Lys 400	His	Tyr	Leu	Ser	Leu 405
Leu	Ser	Tyr	Val	Gly 410	Cys	Val	Val	Ser	Ala 415	Leu	Ala	Cys	Leu	Val 420
Thr	Ile	Ala	Ala	Tyr 425	Leu	Cys	Ser	Arg	Val 430	Pro	Leu	Pro	Cys	Arg 435
Arg	Lys	Pro	Arg	Asp 440	Tyr	Thr	Ile	Lys	Val 445	His	Met	Asn	Leu	Leu 450
Leu	Ala	Val	Phe	Leu 455	Leu	Asp	Thr	Ser	Phe 460	Leu	Leu	Ser	Glu	Pro 465
Val	Ala	Leu	Thr	Gly 470	Ser	Glu	Ala	Gly	Cys 475	Arg	Ala	Ser	Ala	Ile 480
Phe	Leu	His	Phe	Ser 485	Leu	Leu	Thr	Суз	Leu 490	Ser	Trp	Met	Gly	Leu 495
Glu	Gly	Tyr	Asn	Leu 500	Tyr	Arg	Leu	Val	Val 505	Glu	Val	Phe	Gly	Thr 510
Tyr	Val	Pro	Gly	Tyr 515	Leu	Leu	Lys	Leu	Ser 520	Ala	Met	Gly	Trp	Gly 525
Phe	Pro	Ile	Phe	Leu 530	Vаl	Thr	Leu	Val	Ala 535	Leu	Val	Asp	Val	Asp 540
Asn	Tyr	Gly	Pro	Ile 545	Ile	Leu	Ala	Val	His 550	Arg	Thr	Pro	Glu	Gly 555
Val	Ile	Tyr	Pro	Ser 560	Met	Cys	Trp	Ile	Arg 565	Asp	Ser	Leu	Val	Ser 570
Tyr	Ile	Thr	Asn	Leu 575	Gly	Leu	Phe	Ser	Leu 580	Val	Phe	Leu	Phe	Asn 585
Met	Ala	Met	Leu	Ala 590	Thr	Met	Val	Val	Gln 595	Ile	Leu	Arg	Leu	Arg 600
Pro	His	Thr	Gln	Lys 605	Trp	Ser	His	Val	Leu 610	Thr	Leu	Leu	Gly	Leu 615
Ser	Leu	Val	Leu	Gly 620	Leu	Pro	Trp	Ala	Leu 625	Ile	Phe	Phe	Ser	Phe 630
Ala	Ser	Gly	Thr	Phe 635	Gln	Leu	Val	Val	Leu 640	Tyr	Leu	Phe	Ser	Ile 645
Ile	Thr	Ser	Phe	Gln 650	Gly	Phe	Leu	Ile	Phe 655	Ile	Trp	Tyr	Trp	Ser 660

<213> Artificial Sequence

```
Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro Leu Lys Ser Asn
                 665
Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser Thr Ser Ser
                 680
                                     685
Ser Arg Ile
<210> 484
<211> 516
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 68, 70, 84, 147
<223> unknown base
<400> 484
 tgcctggcct gccttgtcaa caatgccgct tactctgctt ccaggttgcc 50
ctgccttgca gaggaaancn tcgggactac accntcaagt gcacatgaac 100
 ctgctgctgg ccgtcttcct gctggacacg agcttcctgc tcagcgnagc 150
 cggtggccct gacaggctct gaaggctggc tgccgagcca gtgccatctt 200
 cctgcacttc tcctgctcac ctgcctttcc tggatgggcc tcgaggggta 250
 caacctctac cgactcgtgg tggaggtctt tggcacctat gtccctggct 300
 acctactcaa gctgagcgcc atgggctggg gcttccccat ctttctggtg 350
 acgctggtgg ccctggtgga tgtggacaac tatggcccca tcatcttggc 400
 tgtgcatagg actccagagg gcgtcatcta cccttccatg tgctggatcc 450
 gggactccct ggtcagctac atcaccaacc tgggcctctt cagcctggtg 500
 tttctgttca acatgg 516
<210> 485
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 485
 ggcattggag cagtgctggg tg 22
<210> 486
<211> 24
<212> DNA
```

```
<220>
<223> Synthetic oligonucleotide probe
<400> 486
tggaggccta gatgcggctg gacg 24
<210> 487
<211> 2849
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 2715
<223> unknown base
<400> 487
 cggacgcgtg ggcggacgcg tgggcggacg cgtgggcgga cgcgtgggct 50
 ggttcaggtc caggttttgc tttgatcctt ttcaaaaact ggagacacag 100
 aagagggctc taggaaaaag ttttggatgg gattatgtgg aaactaccct 150
 gcgattetet getgeeagag caggetegge getteeacee cagtgeagee 200
 ttcccctggc ggtggtgaaa gagactcggg agtcgctgct tccaaagtgc 250
 ccgccgtgag tgagctctca ccccaqtcag ccaaatgagc ctcttcgggc 300
 ttctcctgct gacatctgcc ctggccggcc agagacaggg gactcaggcg 350
 gaatccaacc tgagtagtaa attccagttt tccagcaaca aggaacagaa 400
 cggagtacaa gatcctcagc atgagagaat tattactgtg tctactaatg 450
 gaagtattca cagcccaagg tttcctcata cttatccaag aaatacggtc 500
 ttggtatgga gattagtagc agtagaggaa aatgtatgga tacaacttac 550
 gtttgatgaa agatttgggc ttgaagaccc agaagatgac atatgcaagt 600
 atgattttgt agaagttgag gaacccagtg atggaactat attagggcgc 650
 tggtgtggtt ctggtactgt accaggaaaa cagatttcta aaggaaatca 700
 aattaggata agatttgtat ctgatgaata ttttccttct gaaccagggt 750
 tetgeateea etacaacatt gteatgeeae aatteacaga agetgtgagt 800
 ccttcagtgc tacccccttc agctttgcca ctggacctgc ttaataatgc 850
 tataactgcc tttagtacct tggaagacct tattcgatat cttgaaccag 900
 agagatggca gttggactta gaagatctat ataggccaac ttggcaactt 950
 cttggcaagg cttttgtttt tggaagaaaa tccagagtgg tggatctgaa 1000
```

ccttctaaca gaggaggtaa gattatacag ctgcacacct cgtaacttct 1050

cagtgtccat aagggaagaa ctaaagagaa ccgataccat tttctggcca 1100 ggttgtctcc tggttaaacg ctgtggtggg aactgtgcct gttgtctcca 1150 caattgcaat gaatgtcaat gtgtcccaag caaagttact aaaaaatacc 1200 acgaggtcct tcagttgaga ccaaagaccg gtgtcagggg attgcacaaa 1250 tcactcaccq acqtqqccct qqaqcaccat qagqaqtqtq actqtqtqtq 1300 cagaggage acaggaggat agecgcatca ecaecageag etettgeeca 1350 gagetgtgca gtgcagtggc tgattctatt agagaacgta tgcgttatct 1400 ccatccttaa tctcagttgt ttgcttcaag gacctttcat cttcaggatt 1450 tacagtgcat tctgaaagag gagacatcaa acagaattag gagttgtgca 1500 acagctcttt tgagaggagg cctaaaggac aggagaaaag gtcttcaatc 1550 gtggaaagaa aattaaatgt tgtattaaat agatcaccag ctagtttcag 1600 agttaccatg tacgtattcc actagctggg ttctgtattt cagttctttc 1650 gatacggett agggtaatgt cagtacagga aaaaaactgt gcaagtgage 1700 acctgattcc gttgccttgc ttaactctaa agctccatgt cctgggccta 1750 aaatcgtata aaatctggat tttttttttt ttttttgctc atattcacat 1800 atgtaaacca gaacattcta tgtactacaa acctggtttt taaaaaggaa 1850 ctatgttgct atgaattaaa cttgtgtcat gctgatagga cagactggat 1900 ttttcatatt tcttattaaa atttctgcca tttagaagaa gagaactaca 1950 ttcatggttt ggaagagata aacctgaaaa gaagagtggc cttatcttca 2000 ctttatcgat aagtcagttt atttgtttca ttgtgtacat ttttatattc 2050 tccttttgac attataactg ttggcttttc taatcttgtt aaatatatct 2100 atttttacca aaggtattta atattctttt ttatgacaac ttagatcaac 2150 tatttttagc ttggtaaatt tttctaaaca caattgttat agccagagga 2200 acaaagatga tataaaatat tgttgctctg acaaaaatac atgtatttca 2250 ttctcgtatg gtgctagagt tagattaatc tgcattttaa aaaactgaat 2300 tqqaataqaa ttqqtaaqtt qcaaaqactt tttqaaaata attaaattat 2350 catatettee atteetgtta ttggagatga aaataaaaag caacttatga 2400 aagtagacat tcagatccag ccattactaa cctattcctt ttttggggaa 2450 atctgagcct agctcagaaa aacataaagc accttgaaaa agacttggca 2500

gcttcctgat aaagcgtgct gtgctgtgca gtaggaacac atcctattta 2550 ttgtgatgtt gtggtttat tatcttaaac tctgttccat acacttgtat 2600 aaatacatgg atattttat gtacagaagt atgtctctta accagttcac 2650 ttattgtact ctggcaattt aaaagaaaat cagtaaaata ttttgcttgt 2700 aaaatgctta atatngtgcc taggttatgt ggtgactatt tgaatcaaaa 2750 atgtattgaa tcatcaaata aaagaatgtg gctattttgg ggagaaaatt 2800 aaaaaaaaaa aaaaaaaaa aggtttaggg ataacagggt aatgcggcc 2849

<210> 488

<211> 345

<212> PRT

<213> Homo sapiens

<400> 488

Met Ser Leu Phe Gly Leu Leu Leu Thr Ser Ala Leu Ala Gly 1 5 10 15

Gln Arg Gln Gly Thr Gln Ala Glu Ser Asn Leu Ser Ser Lys Phe $20 \hspace{1cm} 25 \hspace{1cm} 30$

Gln Phe Ser Ser Asn Lys Glu Gln Asn Gly Val Gln Asp Pro Gln 35 40 45

His Glu Arg Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser 50 55 60

Pro Arg Phe Pro His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp
65 70 75

Arg Leu Val Ala Val Glu Glu Asn Val Trp Ile Gln Leu Thr Phe $80 \hspace{1cm} 85 \hspace{1cm} 90$

Asp Glu Arg Phe Gly Leu Glu Asp Pro Glu Asp Asp Ile Cys Lys 95 100 105

Tyr Asp Phe Val Glu Val Glu Glu Pro Ser Asp Gly Thr Ile Leu 110 115 120

Gly Arg Trp Cys Gly Ser Gly Thr Val Pro Gly Lys Gln Ile Ser 125 130 135

Lys Gly Asn Gln Ile Arg Ile Arg Phe Val Ser Asp Glu Tyr Phe 140 145 150

Pro Ser Glu Pro Gly Phe Cys Ile His Tyr Asn Ile Val Met Pro 155 160 165

Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu Pro Pro Ser Ala 170 175 180

Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala Phe Ser Thr 185 190 195

```
Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp Gln Leu
                 200
 Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly Lys
Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu
                 230
                                     235
Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe
                 245
 Ser Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe
                 260
                                     265
 Trp Pro Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala
                 275
 Cys Cys Leu His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys
                 290
                                     295
Val Thr Lys Lys Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr
                 305
Gly Val Arg Gly Leu His Lys Ser Leu Thr Asp Val Ala Leu Glu
His His Glu Glu Cys Asp Cys Val Cys Arg Gly Ser Thr Gly Gly
<210> 489
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 489
acttctcagt gtccataagg g 21
<210> 490
<211> 40
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 490
gaactaaaga gaaccgatac cattttctgg ccaggttgtc 40
<210> 491
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
```

```
<223> Synthetic oligonucleotide probe
<400> 491
caccacagcg tttaaccagg 20
<210> 492
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 492
acaacaggca cagttcccac 20
<210> 493
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 493
ggcggaatcc aacctgagta g 21
<210> 494
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 494
gcggctatcc tcctgtgctc 20
<210> 495
<211> 3283
<212> DNA
<213> Homo sapiens
<400> 495
 gacctctaca ttccattttg gaagaagact aaaaatggtg tttccaatgt 100
 ggacactgaa gagacaaatt cttatccttt ttaacataat cctaatttcc 150
 aaactccttg gggctagatg gtttcctaaa actctgccct gtgatgtcac 200
 tctggatgtt ccaaagaacc atgtgatcgt ggactgcaca gacaagcatt 250
 tgacagaaat tcctggaggt attcccacga acaccacgaa cctcaccctc 300
 accattaacc acataccaga catctcccca gcgtcctttc acagactgga 350
```

ccatctggta gagatcgatt tcagatgcaa ctgtgtacct attccactgg 400 ggtcaaaaaa caacatgtgc atcaagaggc tgcagattaa acccagaagc 450 tttagtggac tcacttattt aaaatccctt tacctggatg gaaaccagct 500 actagagata ccgcagggcc tcccgcctag cttacagctt ctcagccttg 550 aggccaacaa catctttcc atcagaaaag agaatctaac agaactggcc 600 aacatagaaa tactctacct gggccaaaac tgttattatc gaaatccttg 650 ttatgtttca tattcaatag agaaagatgc cttcctaaac ttgacaaagt 700 taaaagtgct ctccctgaaa gataacaatg tcacagccgt ccctactgtt 750 ttgccatcta ctttaacaga actatatctc tacaacaaca tgattgcaaa 800 aatccaagaa gatgatttta ataacctcaa ccaattacaa attcttgacc 850 taagtggaaa ttgccctcgt tgttataatg ccccatttcc ttgtgcgccg 900 tgtaaaaata attctcccct acagatccct gtaaatgctt ttgatgcgct 950 gacagaatta aaagttttac gtctacacag taactctctt cagcatgtgc 1000 ccccaagatg gtttaagaac atcaacaaac tccaggaact ggatctgtcc 1050 caaaacttct tggccaaaga aattggggat gctaaatttc tgcattttct 1100 ecceageete atecaattgg atetgtettt caattttgaa etteaggtet 1150 atcqtqcatc tatqaatcta tcacaaqcat tttcttcact gaaaaqcctg 1200 aaaattctgc ggatcagagg atatgtcttt aaagagttga aaagctttaa 1250 cctctcgcca ttacataatc ttcaaaatct tgaagttctt gatcttggca 1300 ctaactttat aaaaattgct aacctcagca tgtttaaaca atttaaaaga 1350 ctgaaagtca tagatctttc agtgaataaa atatcacctt caggagattc 1400 aagtgaagtt ggcttctgct caaatgccag aacttctgta gaaagttatg 1450 aaccccaggt cctggaacaa ttacattatt tcagatatga taagtatgca 1500 aggagttgca gattcaaaaa caaagaggct tctttcatgt ctgttaatga 1550 aagctgctac aagtatgggc agaccttgga tctaagtaaa aatagtatat 1600 tttttgtcaa gtcctctgat tttcagcatc tttctttcct caaatgcctg 1650 aatctgtcag gaaatctcat tagccaaact cttaatggca gtgaattcca 1700 acctttagca gagctgagat atttggactt ctccaacaac cggcttgatt 1750 tactccattc aacagcattt gaagagcttc acaaactgga agttctggat 1800

ataagcagta atagccatta ttttcaatca gaaggaatta ctcatatgct 1850 aaactttacc aagaacctaa aggttctgca gaaactgatg atgaacgaca 1900 atgacatete tteeteeace ageaggacea tggagagtga gtetettaga 1950 actotggaat toagaggaaa toacttagat gttttatgga gagaaggtga 2000 taacagatac ttacaattat tcaagaatct gctaaaatta gaggaattag 2050 acatctctaa aaattcccta agtttcttgc cttctggagt ttttgatggt 2100 atgcctccaa atctaaagaa tctctctttg gccaaaaatg ggctcaaatc 2150 tttcagttgg aagaaactcc agtgtctaaa gaacctggaa actttggacc 2200 tcagccacaa ccaactgacc actgtccctg agagattatc caactgttcc 2250 gaagtatttt ctacaagatg ccttccagtt gcgatatctg gatctcagct 2350 caaataaaat ccagatgatc caaaagacca gcttcccaga aaatgtcctc 2400 aacaatctga agatgttgct tttgcatcat aatcggtttc tgtgcacctg 2450 tgatgctgtg tggtttgtct ggtgggttaa ccatacggag gtgactattc 2500 cttacctggc cacagatgtg acttgtgtgg ggccaggagc acacaagggc 2550 caaagtgtga tctccctgga tctgtacacc tgtgagttag atctgactaa 2600 cctgattctg ttctcacttt ccatatctgt atctctcttt ctcatggtga 2650 tgatgacagc aagtcacctc tatttctggg atgtgtggta tatttaccat 2700 ttctgtaagg ccaagataaa ggggtatcag cgtctaatat caccagactg 2750 ttgctatgat gcttttattg tgtatgacac taaagaccca gctgtgaccg 2800 agtgggtttt ggctgagctg gtggccaaac tggaagaccc aaqaqaqaaa 2850 cattttaatt tatgtctcga ggaaagggac tggttaccag ggcagccagt 2900 tctggaaaac ctttcccaga gcatacagct tagcaaaaag acagtgtttg 2950 tgatgacaga caagtatgca aagactgaaa attttaagat agcattttac 3000 ttgtcccatc agaggctcat ggatgaaaaa gttgatgtga ttatcttgat 3050 atttcttgag aagccctttc agaagtccaa gttcctccag ctccggaaaa 3100 ggctctgtgg gagttctgtc cttgagtggc caacaaaccc gcaagctcac 3150 ccatacttct ggcagtgtct aaagaacgcc ctggccacag acaatcatgt 3200 ggcctatagt caggtgttca aggaaacggt ctagcccttc tttgcaaaac 3250

acaactgcct agtttaccaa ggagaggcct ggc 3283

- <210> 496
- <211> 1049
- <212> PRT
- <213> Homo sapiens

<400> 496

- Met Val Phe Pro Met Trp Thr Leu Lys Arg Gln Ile Leu Ile Leu 1 5 10 15
- Phe Asn Ile Ile Leu Ile Ser Lys Leu Leu Gly Ala Arg Trp Phe 20 25 30
- Pro Lys Thr Leu Pro Cys Asp Val Thr Leu Asp Val Pro Lys Asn 35 40 45
- His Val Ile Val Asp Cys Thr Asp Lys His Leu Thr Glu Ile Pro
 50 55 60
- Gly Gly Ile Pro Thr Asn Thr Thr Asn Leu Thr Leu Thr Ile Asn 65 70 75
- His Ile Pro Asp Ile Ser Pro Ala Ser Phe His Arg Leu Asp His 80 85 90
- Leu Val Glu Ile Asp Phe Arg Cys Asn Cys Val Pro Ile Pro Leu 95 100 105
- Gly Ser Lys Asn Asn Met Cys Ile Lys Arg Leu Gln Ile Lys Pro 110 115 120
- Arg Ser Phe Ser Gly Leu Thr Tyr Leu Lys Ser Leu Tyr Leu Asp 125 130 135
- Gly Asn Gln Leu Leu Glu Ile Pro Gln Gly Leu Pro Pro Ser Leu
 140 145 150
- Gln Leu Leu Ser Leu Glu Ala Asn Asn Ile Phe Ser Ile Arg Lys 155 160 165
- Glu Asn Leu Thr Glu Leu Ala Asn Ile Glu Ile Leu Tyr Leu Gly
 170 175 180
- Gln Asn Cys Tyr Tyr Arg Asn Pro Cys Tyr Val Ser Tyr Ser Ile 185 190 195
- Glu Lys Asp Ala Phe Leu Asn Leu Thr Lys Leu Lys Val Leu Ser 200 205 210
- Leu Lys Asp Asn Asn Val Thr Ala Val Pro Thr Val Leu Pro Ser 215 220 225
- Thr Leu Thr Glu Leu Tyr Leu Tyr Asn Asn Met Ile Ala Lys Ile 230 235 240
- Gln Glu Asp Asp Phe Asn Asn Leu Asn Gln Leu Gln Ile Leu Asp 245 250 255

Leu Ser Gly Asn Cys Pro Arg Cys Tyr Asn Ala Pro Phe Pro Cys Ala Pro Cys Lys Asn Asn Ser Pro Leu Gln Ile Pro Val Asn Ala Phe Asp Ala Leu Thr Glu Leu Lys Val Leu Arg Leu His Ser Asn 290 Ser Leu Gln His Val Pro Pro Arg Trp Phe Lys Asn Ile Asn Lys 305 310 Leu Gln Glu Leu Asp Leu Ser Gln Asn Phe Leu Ala Lys Glu Ile 320 325 Gly Asp Ala Lys Phe Leu His Phe Leu Pro Ser Leu Ile Gln Leu 335 Asp Leu Ser Phe Asn Phe Glu Leu Gln Val Tyr Arg Ala Ser Met Asn Leu Ser Gln Ala Phe Ser Ser Leu Lys Ser Leu Lys Ile Leu Arg Ile Arg Gly Tyr Val Phe Lys Glu Leu Lys Ser Phe Asn Leu Ser Pro Leu His Asn Leu Gln Asn Leu Glu Val Leu Asp Leu Gly Thr Asn Phe Ile Lys Ile Ala Asn Leu Ser Met Phe Lys Gln Phe Lys Arg Leu Lys Val Ile Asp Leu Ser Val Asn Lys Ile Ser Pro 435 Ser Gly Asp Ser Ser Glu Val Gly Phe Cys Ser Asn Ala Arg Thr Ser Val Glu Ser Tyr Glu Pro Gln Val Leu Glu Gln Leu His Tyr Phe Arg Tyr Asp Lys Tyr Ala Arg Ser Cys Arg Phe Lys Asn Lys Glu Ala Ser Phe Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly 485 Gln Thr Leu Asp Leu Ser Lys Asn Ser Ile Phe Phe Val Lys Ser Ser Asp Phe Gln His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser 515 Gly Asn Leu Ile Ser Gln Thr Leu Asn Gly Ser Glu Phe Gln Pro Leu Ala Glu Leu Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp

				545					550					555
Leu	Leu	His	Ser	Thr 560	Ala	Phe	Glu	Glu	Leu 565	His	Lys	Leu	Glu	Val 570
Leu	Asp	Ile	Ser	Ser 575	Asn	Ser	His	Tyr	Phe 580	Gln	Ser	Glu	Gly	Ile 585
Thr	His	Met	Leu	Asn 590	Phe	Thr	Lys	Asn	Leu 595	Lys	Val	Leu	Gln	Lys 600
Leu	Met	Met	Asn	Asp 605	Asn	Asp	Ile	Ser	Ser 610	Ser	Thr	Ser	Arg	Thr 615
Met	Glu	Ser	Glu	Ser 620	Leu	Arġ	Thr	Leu	Glu 625	Phe	Arg	Gly	Asn	His 630
Leu	Asp	Val	Leu	Trp 635	Arg	Glu	Gly	Asp	Asn 640	Arg	Tyr	Leu	Gln	Leu 645
Phe	Lys	Asn	Leu	Leu 650	Lys	Leu	Glu	Glu	Leu 655	Asp	Ile	Ser	Lys	Asn 660
Ser	Leu	Ser	Phe	Leu 665	Pro	Ser	Gly	Val	Phe 670	Asp	Gly	Met	Pro	Pro 675
Asn	Leu	Lys	Asn	Leu 680	Ser	Leu	Ala	Lys	Asn 685	Gly	Leu	Lys	Ser	Phe 690
Ser	Trp	Lys	Lys	Leu 695	Gln	Cys	Leu	Lys	Asn 700	Leu	Glu	Thr	Leu	Asp 705
Leu	Ser	His	Asn	Gln 710	Leu	Thr	Thr	Val	Pro 715	Glu	Arg	Leu	Ser	Asn 720
Cys	Ser	Arg	Ser	Leu 725	Lys	Asn	Leu	Ile	Leu 730	Lys	Asn	Asn	Gln	Ile 735
Arg	Ser	Leu	Thr	Lys 740	Tyr	Phe	Leu	Gln	Asp 745	Ala	Phe	Gln	Leu	Arg 750
Tyr	Leu	Asp	Leu	Ser 755	Ser	Asn	Lys	Ile	Gln 760	Met	Ile	Gln	Lys	Thr 765
Ser	Phe	Pro	Glu	Asn 770	Val	Leu	Asn	Asn	Leu 775	Lys	Met	Leu	Leu	Leu 780
His	His	Asn	Arg	Phe 785	Leu	Cys	Thr	Cys	Asp 790	Ala	Val	Trp	Phe	Val 795
Trp	Trp	Val	Asn	His 800	Thr	Glu	Val	Thr	Ile 805	Pro	Tyr	Leu	Ala	Thr 810
Asp	Val	Thr	Суз	Val 815	Gly	Pro	Gly	Ala	His 820	Lys	Gly	Gln	Ser	Val 825
Ile	Ser	Leu	Asp	Leu 830	Tyr	Thr	Суз	Glu	Leu 835	Asp	Leu	Thr	Asn	Leu 840

Ile Leu Phe Ser Leu Ser Ile Ser Val Ser Leu Phe Leu Met Val 855 Met Met Thr Ala Ser His Leu Tyr Phe Trp Asp Val Trp Tyr Ile 860 Tyr His Phe Cys Lys Ala Lys Ile Lys Gly Tyr Gln Arg Leu Ile 875 Ser Pro Asp Cys Cys Tyr Asp Ala Phe Ile Val Tyr Asp Thr Lys 895 900 Asp Pro Ala Val Thr Glu Trp Val Leu Ala Glu Leu Val Ala Lys Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys Leu Glu Glu 930 920 Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu Ser Gln 935 Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Asp Lys 950 Tyr Ala Lys Thr Glu Asn Phe Lys Ile Ala Phe Tyr Leu Ser His 965 Gln Arg Leu Met Asp Glu Lys Val Asp Val Ile Ile Leu Ile Phe 980 Leu Glu Lys Pro Phe Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys 1000 995 Arg Leu Cys Gly Ser Ser Val Leu Glu Trp Pro Thr Asn Pro Gln 1015 1010 Ala His Pro Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Ala Thr 1030 1025

<210> 497

<211> 4199

<212> DNA

<213> Homo sapiens

<400> 497

gggtaccatt ctgcgctgct gcaagttacg gaatgaaaaa ttagaacaac 50 agaaacatgg aaaacatgtt ccttcagtcg tcaatgctga cctgcatttt 100 cctgctaata tctggttcct gtgagttatg cgccgaagaa aattttcta 150 gaagctatcc ttgtgatgag aaaaagcaaa atgactcagt tattgcagag 200 tgcagcaatc gtcgactaca ggaagttccc caaacggtgg gcaaatatgt 250

Asp Asn His Val Ala Tyr Ser Gln Val Phe Lys Glu Thr Val

gacagaacta gacctgtctg ataatttcat cacacacata acgaatgaat 300 catttcaagg gctgcaaaat ctcactaaaa taaatctaaa ccacaacccc 350 aatgtacagc accagaacgg aaatcccggt atacaatcaa atggcttgaa 400 tatcacagac ggggcattcc tcaacctaaa aaacctaagg gagttactgc 450 ttgaagacaa ccagttaccc caaataccct ctggtttgcc agagtctttg 500 acagaactta gtctaattca aaacaatata tacaacataa ctaaagaggg 550 catttcaaga cttataaact tgaaaaatct ctatttggcc tggaactgct 600 attttaacaa agtttgcgag aaaactaaca tagaagatgg agtatttgaa 650 acgctgacaa atttggagtt gctatcacta tctttcaatt ctctttcaca 700 cgtgccaccc aaactgccaa gctccctacg caaacttttt ctgagcaaca 750 cccagatcaa atacattagt qaagaagatt tcaagggatt gataaattta 800 acattactag atttaagcgg gaactgtccg aggtgcttca atgccccatt 850 tccatgcgtg ccttgtgatg gtggtgcttc aattaatata gatcgttttg 900 cttttcaaaa cttgacccaa cttcgatacc taaacctctc tagcacttcc 950 ctcaggaaga ttaatgctgc ctggtttaaa aatatgcctc atctgaaggt 1000 gctggatctt gaattcaact atttagtggg agaaatagtc tctggggcat 1050 ttttaacgat gctgccccgc ttagaaatac ttgacttgtc ttttaactat 1100 ataaagggga gttatccaca gcatattaat atttccagaa acttctctaa 1150 acttttgtct ctacgggcat tgcatttaag aggttatgtg ttccaggaac 1200 tcagagaaga tgatttccag cccctgatgc agcttccaaa cttatcgact 1250 atcaacttgg gtattaattt tattaagcaa atcgatttca aacttttcca 1300 aaatttetee aatetggaaa ttatttaett gteagaaaac agaatateac 1350 cgttggtaaa agatacccgg cagagttatg caaatagttc ctcttttcaa 1400 cgtcatatcc ggaaacgacg ctcaacagat tttgagtttg acccacattc 1450 gaacttttat catttcaccc gtcctttaat aaagccacaa tgtgctgctt 1500 atggaaaagc cttagattta agcctcaaca gtattttctt cattgggcca 1550 aaccaatttg aaaatcttcc tgacattgcc tgtttaaatc tgtctgcaaa 1600 tagcaatgct caagtgttaa gtggaactga attttcagcc attcctcatg 1650 tcaaatattt ggatttgaca aacaatagac tagactttga taatgctagt 1700

gctcttactg aattgtccga cttggaagtt ctagatctca gctataattc 1750 acactatttc agaatagcag gcgtaacaca tcatctagaa tttattcaaa 1800 atttcacaaa tctaaaagtt ttaaacttga gccacaacaa catttatact 1850 ttaacagata agtataacct ggaaagcaag tccctggtag aattagtttt 1900 cagtggcaat cgccttgaca ttttgtggaa tgatgatgac aacaggtata 1950 tctccatttt caaaggtctc aagaatctga cacgtctgga tttatccctt 2000 aataggctga agcacatccc aaatgaagca ttccttaatt tgccagcgag 2050 tctcactgaa ctacatataa atgataatat gttaaagttt tttaactgga 2100 cattactcca gcagtttcct cgtctcgagt tgcttgactt acgtggaaac 2150 aaactactct ttttaactga tagcctatct gactttacat cttcccttcg 2200 gacactgctg ctgagtcata acaggatttc ccacctaccc tctggctttc 2250 tttctgaagt cagtagtctg aagcacctcg atttaagttc caatctgcta 2300 aaaacaatca acaaatccgc acttgaaact aagaccacca ccaaattatc 2350 tatgttggaa ctacacggaa accectttga atgcacctgt gacattggag 2400 atttccgaag atggatggat gaacatctga atgtcaaaat tcccagactg 2450 gtagatgtca tttgtgccag tcctggggat caaagaggga agagtattgt 2500 gagtctggag ctaacaactt gtgtttcaga tgtcactgca gtgatattat 2550 ttttcttcac gttctttatc accaccatgg ttatgttggc tgccctggct 2600 caccatttgt tttactggga tgtttggttt atatataatg tgtgtttagc 2650 taaggtaaaa ggctacaggt ctctttccac atcccaaact ttctatgatg 2700 cttacatttc ttatgacacc aaagatgcct ctgttactga ctgggtgata 2750 aatgagetge getaecacet tgaagagage egagacaaaa aegtteteet 2800 ttgtctagag gagagggatt gggacccggg attggccatc atcgacaacc 2850 tcatgcagag catcaaccaa agcaagaaaa cagtatttgt tttaaccaaa 2900 aaatatgcaa aaagctggaa ctttaaaaca gctttttact tggctttgca 2950 gaggetaatg gatgagaaca tggatgtgat tatatttate etgetggage 3000 cagtgttaca gcattctcag tatttgaggc tacggcagcg gatctgtaag 3050 agetecatee tecagtggee tgacaaceeg aaggeagaag gettgttttg 3100 gcaaactctg agaaatgtgg tcttgactga aaatgattca cggtataaca 3150

atatgtatgt cgattccatt aagcaatact aactgacgtt aagtcatgat 3200 ttcgcgccat aataaagatg caaaggaatg acatttctgt attagttatc 3250 tattqctatg taacaaatta tcccaaaact tagtggttta aaacaacaca 3300 tttgctggcc cacagttttt gagggtcagg agtccaggcc cagcataact 3350 gggtcctctg ctcagggtgt ctcagaggct gcaatgtagg tgttcaccag 3400 agacatagge atcactgggg tcacactcat gtggttgttt tctggattca 3450 attcctcctg ggctattggc caaaggctat actcatgtaa gccatgcgag 3500 cctctcccac aaggcagctt gcttcatcag agctagcaaa aaagagaggt 3550 tgctagcaag atgaagtcac aatcttttgt aatcgaatca aaaaagtgat 3600 atctcatcac tttggccata ttctatttgt tagaagtaaa ccacaggtcc 3650 caccagetee atgggagtga ccaceteagt ccagggaaaa cagetgaaga 3700 ccaagatggt gagctctgat tgcttcagtt ggtcatcaac tattttccct 3750 tgactgctgt cctgggatgg cctgctatct tgatgataga ttgtgaatat 3800 caggaggcag ggatcactgt ggaccatctt agcagttgac ctaacacatc 3850 ttcttttcaa tatctaagaa cttttgccac tgtgactaat ggtcctaata 3900 ttaagctgtt gtttatattt atcatatatc tatggctaca tggttatatt 3950 atgctgtggt tgcgttcggt tttatttaca gttgctttta caaatatttg 4000 ctgtaacatt tgacttctaa ggtttagatg ccatttaaga actgagatgg 4050 atagctttta aagcatcttt tacttcttac cattttttaa aagtatgcag 4100 ctaaattcga agcttttggt ctatattgtt aattgccatt gctgtaaatc 4150 ttaaaatgaa tgaataaaaa tgtttcattt tacaaaaaaa aaaaaaaaa 4199

Ile Ala Glu Cys Ser Asn Arg Arg Leu Gln Glu Val Pro Gln Thr

<210> 498

<211> 1041

<212> PRT

<213> Homo sapiens

<400> 498

Met Glu Asn Met Phe Leu Gln Ser Ser Met Leu Thr Cys Ile Phe 1 5 10 15

Leu Leu Ile Ser Gly Ser Cys Glu Leu Cys Ala Glu Glu Asn Phe
20 25 30

Ser Arg Ser Tyr Pro Cys Asp Glu Lys Lys Gln Asn Asp Ser Val

				50					55					60
Val	Gly	Lys	Tyr	Val 65	Thr	Glu	Leu	Asp	Leu 70	Ser	Asp	Asn	Phe	Ile 75
Thr	His	Ile	Thr	Asn 80	Glu	Ser	Phe	Gln	Gly 85	Leu	Gln	Asn	Leu	Thr 90
Lys	Ile	Asn	Leu	Asn 95	His	Asn	Pro	Asn	Val 100	Gln	His	Gln	Asn	Gly 105
Asn	Pro	Gly	Ile	Gln 110	Ser	Asn	Gly	Leu	Asn 115	Ile	Thr	Asp	Gly	Ala 120
Phe	Leu	Asn	Leu	Lys 125	Asn	Leu	Arg	Glu	Leu 130	Leu	Leu	Glu	Asp	Asn 135
Gln	Leu	Pro	Gln	Ile 140	Pro	Ser	Gly	Leu	Pro 145	Glu	Ser	Leu	Thr	Glu 150
Leu	Ser	Leu	Ile	Gln 155	Asn	Asn	Ile	Tyr	Asn 160	Ile	Thr	Lys	Glu	Gly 165
Ile	Ser	Arg	Leu	Ile 170	Asn	Leu	Lys	Asn	Leu 175	Tyr	Leu	Ala	Trp	Asn 180
Cys	Tyr	Phe	Asn	Lys 185	Val	Cys	Glu	Lys	Thr 190	Asn	Ile	Glu	Asp	Gly 195
Val	Phe	Glu	Thr	Leu 200	Thr	Asn	Leu	Glu	Leu 205	Leu	Ser	Leu	Ser	Phe 210
Asn	Ser	Leu	Ser	His 215	Val	Pro	Pro	Lys	Leu 220	Pro	Ser	Ser	Leu	Arg 225
Lys	Leu	Phe	Leu	Ser 230	Asn	Thr	Gln	Ile	Lys 235	Tyr	Ile	Ser	Glu	Glu 240
Asp	Phe	Lys	Gly	Leu 245	Ile	Asn	Leu	Thr	Leu 250	Leu	Asp	Leu	Ser	Gly 255
Asn	Cys	Pro	Arg	Cys 260	Phe	Asn	Ala	Pro	Phe 265	Pro	Cys	Val	Pro	Cys 270
Asp	Gly	Gly	Ala	Ser 275	Ile	Asn	Ile	Asp	Arg 280	Phe	Ala	Phe	Gln	Asn 285
Leu	Thr	Gln	Leu	Arg 290	Tyr	Leu	Asn	Leu	Ser 295	Ser	Thr	Ser	Leu	Arg 300
Lys	Ile	Asn	Ala	Ala 305	Trp	Phe	Lys	Asn	Met 310	Pro	His	Leu	Lys	Val 315
Leu	Asp	Leu	Glu	Phe 320	Asn	Tyr	Leu	Val	Gly 325	Glu	Ile	Val	Ser	Gly 330
Ala	Phe	Leu	Thr	Met 335	Leu	Pro	Arg	Leu	Glu 340	Ile	Leu	Asp	Leu	Ser 345

Phe Asn Tyr Ile Lys Gly Ser Tyr Pro Gln His Ile Asn Ile Ser Arg Asn Phe Ser Lys Leu Leu Ser Leu Arg Ala Leu His Leu Arg Gly Tyr Val Phe Gln Glu Leu Arg Glu Asp Asp Phe Gln Pro Leu 380 Met Gln Leu Pro Asn Leu Ser Thr Ile Asn Leu Gly Ile Asn Phe 395 Ile Lys Gln Ile Asp Phe Lys Leu Phe Gln Asn Phe Ser Asn Leu Glu Ile Ile Tyr Leu Ser Glu Asn Arg Ile Ser Pro Leu Val Lys Asp Thr Arg Gln Ser Tyr Ala Asn Ser Ser Ser Phe Gln Arg His Ile Arg Lys Arg Arg Ser Thr Asp Phe Glu Phe Asp Pro His Ser 455 Asn Phe Tyr His Phe Thr Arg Pro Leu Ile Lys Pro Gln Cys Ala Ala Tyr Gly Lys Ala Leu Asp Leu Ser Leu Asn Ser Ile Phe Phe 485 Ile Gly Pro Asn Gln Phe Glu Asn Leu Pro Asp Ile Ala Cys Leu 500 Asn Leu Ser Ala Asn Ser Asn Ala Gln Val Leu Ser Gly Thr Glu 515 Phe Ser Ala Ile Pro His Val Lys Tyr Leu Asp Leu Thr Asn Asn Arg Leu Asp Phe Asp Asn Ala Ser Ala Leu Thr Glu Leu Ser Asp 545 Leu Glu Val Leu Asp Leu Ser Tyr Asn Ser His Tyr Phe Arg Ile Ala Gly Val Thr His His Leu Glu Phe Ile Gln Asn Phe Thr Asn 575 Leu Lys Val Leu Asn Leu Ser His Asn Asn Ile Tyr Thr Leu Thr 595 Asp Lys Tyr Asn Leu Glu Ser Lys Ser Leu Val Glu Leu Val Phe 605 615 Ser Gly Asn Arg Leu Asp Ile Leu Trp Asn Asp Asp Asn Arg Tyr Ile Ser Ile Phe Lys Gly Leu Lys Asn Leu Thr Arg Leu Asp

				635					640					645
Leu	Ser	Leu	Asn	Arg 650	Leu	Lys	His	Ile	Pro 655	Asn	Glu	Ala	Phe	Leu 660
Asn	Leu	Pro	Ala	Ser 665	Leu	Thr	Glu	Leu	His 670	Ile	Asn	Asp	Asn	Met 675
Leu	Lys	Phe	Phe	Asn 680	Trp	Thr	Leu	Leu	Gln 685	Gln	Phe	Pro	Arg	Leu 690
Glu	Leu	Leu	Asp	Leu 695	Arg	Gly	Asn	Lys	Leu 700	Leu	Phe	Leu	Thr	Asp 705
Ser	Leu	Ser	Asp	Phe 710	Thr	Ser	Ser	Leu	Arg 715	Thr	Leu	Leu	Leu	Ser 720
His	Asn	Arg	Ile	Ser 725	His	Leu	Pro	Ser	Gly 730	Phe	Leu	Ser	Glu	Val 735
Ser	Ser	Leu	Lys	His 740	Leu	Asp	Leu	Ser	Ser 745	Asn	Leu	Leu	Lys	Thr 750
Ile	Asn	Lys	Ser	Ala 755	Leu	Glu	Thr	Lys	Thr 760	Thr	Thr	Lys	Leu	Ser 765
Met	Leu	Glu	Leu	His 770	Gly	Asn	Pro	Phe	Glu 775	Cys	Thr	Cys	Asp	Ile 780
Gly	Asp	Phe	Arg	Arg 785	Trp	Met	Asp	Glu	His 790	Leu	Asn	Val	Lys	Ile 795
Pro	Arg	Leu	Val	Asp 800	Val	Ile	Cys	Ala	Ser 805	Pro	Gly	Asp	Gln	Arg 810
Gly	Lys	Ser	Ile	Val 815	Ser	Leu	Glu	Leu	Thr 820	Thr	Cys	Val	Ser	Asp 825
Val	Thr	Ala	Val	Ile 830	Leu	Phe	Phe	Phe	Thr 835	Phe	Phe	Ile	Thr	Thr 840
Met	Val	Met	Leu	Ala 845	Ala	Leu	Ala	His	His 850	Leu	Phe	Tyr	Trp	Asp 855
Val	Trp	Phe	Ile	Tyr 860	Asn	Val	Cys	Leu	Ala 865	Lys	Val	Lys	Gly	Tyr 870
Arg	Ser	Leu	Ser	Thr 875	Ser	Gln	Thr	Phe	Tyr 880	Asp	Ala	Tyr	Ile	Ser 885
Tyr	Asp	Thr	Lys	Asp 890	Ala	Ser	Val	Thr	Asp 895	Trp	Val	Ile	Asn	Glu 900
Leu	Arg	Tyr	His	Leu 905	Glu	Glu	Ser	Arg	Asp 910	Lys	Asn	Val	Leu	Leu 915
Cys	Leu	Glu	Glu	Arg 920	Asp	Trp	Asp	Pro	Gly 925	Leu	Ala	Ile	Ile	Asp 930

<210> 502

```
Asn Leu Met Gln Ser Ile Asn Gln Ser Lys Lys Thr Val Phe Val
Leu Thr Lys Lys Tyr Ala Lys Ser Trp Asn Phe Lys Thr Ala Phe
                                     955
                                                          960
Tyr Leu Ala Leu Gln Arg Leu Met Asp Glu Asn Met Asp Val Ile
 Ile Phe Ile Leu Leu Glu Pro Val Leu Gln His Ser Gln Tyr Leu
Arg Leu Arg Gln Arg Ile Cys Lys Ser Ser Ile Leu Gln Trp Pro
                                    1000
Asp Asn Pro Lys Ala Glu Gly Leu Phe Trp Gln Thr Leu Arg Asn
                1010
Val Val Leu Thr Glu Asn Asp Ser Arg Tyr Asn Asn Met Tyr Val
                1025
Asp Ser Ile Lys Gln Tyr
                1040
<210> 499
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 499
taaagaccca gctgtgaccg 20
<210> 500
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 500
atccatgage ctctgatggg 20
<210> 501
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 501
```

atttatgtct cgaggaaagg gactggttac cagggcagcc agttc 45

```
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 502
gccgagacaa aaacgttctc c 21
<210> 503
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 503
catccatgtt ctcatccatt agcc 24
<210> 504
<211> 46
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 504
tcgacaacct catgcagagc atcaaccaaa gcaagaaaac agtatt 46
<210> 505
<211> 1738
<212> DNA
<213> Homo sapiens
<400> 505
ccaggtccaa ctgcacctcg gttctatcga ttgaattccc cggggatcct 50
 ctagagatcc ctcgacctcg acccacgcgt ccgccaagct ggccctgcac 100
ggctgcaagg gaggctcctg tggacaggcc aggcaggtgg gcctcaggag 150
gtgcctccag gcggccagtg ggcctgaggc cccagcaagg gctagggtcc 200
atctccagtc ccaggacaca gcagcggcca ccatggccac gcctgggctc 250
cagcagcatc agcagcccc aggaccgggg aggcacaggt ggcccccacc 300
accoggagga gcagctcctg cccctgtccg ggggatgact gattctcctc 350
cgccaggcca cccagaggag aaggccaccc cgcctggagg cacaggccat 400
gaggggctct caggaggtgc tgctgatgtg gcttctggtg ttggcagtgg 450
gcggcacaga gcacgcctac cggcccggcc gtagggtgtg tgctgtccgg 500
```

getcaegggg accetgtete egagtegtte gtgeagegtg tgtaceagee 550 cttcctcacc acctgcgacg ggcaccgggc ctgcagcacc taccgaacca 600 tctataggac cgcctaccgc cgcagccctg ggctggcccc tgccaggcct 650 cgctacgcgt gctgccccgg ctggaagagg accagcgggc ttcctggggc 700 ctgtggagca gcaatatgcc agccgccatg ccggaacgga gggagctgtg 750 tccagcctgg ccgctgccgc tgccctgcag gatggcgggg tgacacttgc 800 cagtcagatg tggatgaatg cagtgctagg aggggcggct gtccccagcg 850 ctgcatcaac accgccggca gttactggtg ccagtgttgg gaggggcaca 900 gcctgtctgc agacggtaca ctctgtgtgc ccaagggagg gccccccagg 950 gtggcccca acccgacagg agtggacagt gcaatgaagg aagaagtgca 1000 gaggetgeag tecagggtgg acctgetgga ggagaagetg cagetggtge 1050 tggccccact gcacagcctg gcctcgcagg cactggagca tgggctcccg 1100 gaccccggca gcctcctggt gcactccttc cagcagctcg gccgcatcga 1150 ctccctgagc gagcagattt ccttcctgga ggagcagctg gggtcctgct 1200 cctgcaagaa agactcgtga ctgcccagcg ccccaggctg gactgagccc 1250 ctcacqccqc cctqcaqccc ccatqcccct gcccaacatg ctgggggtcc 1300 agaagccacc tcggggtgac tgagcggaag gccaggcagg gccttcctcc 1350 tetteeteet cecetteete gggaggetee ceagaceetg geatgggatg 1400 ggctgggatc ttctctgtga atccaccct ggctaccccc accctggcta 1450 ccccaacggc atcccaaggc caggtgggcc ctcagctgag ggaaggtacg 1500 ageteeetge tggageetgg gaeeeatgge acaggeeagg cageeeggag 1550 gctgggtggg gcctcagtgg gggctgctgc ctgaccccca gcacaataaa 1600 aaagggcggc cgcgactcta gagtcgacct gcagaagctt ggccgccatg 1700 gcccaacttg tttattgcag cttataatgg ttacaaat 1738

<210> 506

<211> 273

<212> PRT

<213> Homo sapiens

<400> 506

Met Arg Gly Ser Gln Glu Val Leu Leu Met Trp Leu Leu Val Leu

1 5 10 15

Ala Val Gly Gly Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val Cys Ala Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln Arg Cys Ile Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly 170 Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala 185 Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu 205 200 Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala 215 Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu 230 Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu 245 Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys 260 265

Lys Asp Ser

<210> 507

<211> 1700

<212> DNA

<213> Homo sapiens

<400> 507 gccaggcagg tgggcctcag gaggtgcctc caggcggcca gtgggcctga 50 ggccccagca agggctaggg tccatctcca gtcccaggac acagcagcgg 100 ccaccatggc cacgcctggg ctccagcagc atcagagcag cccctgtggt 150 tggcagcaaa gttcagcttg gctgggcccg ctgtgagggg cttcgcgcta 200 cgccctgcgg tgtcccgagg gctgaggtct cctcatcttc tccctagcag 250 tggatgagca acccaacggg ggcccgggga ggggaactgg ccccgaggga 300 gaggaacccc aaagccacat ctgtagccag gatgagcagt gtgaatccag 350 gcagccccca ggaccgggga ggcacaggtg gcccccacca cccggaggag 400 cageteetge ecetgteegg gggatgactg atteteetee gecaggeeae 450 ccagaggaga aggccacccc gcctggaggc acaggccatg aggggctctc 500 aggaggtgct gctgatgtgg cttctggtgt tggcagtggg cggcacagag 550 cacgcctacc ggcccggccg tagggtgtgt gctgtccggg ctcacgggga 600 ccctgtctcc gagtcgttcg tgcagcgtgt gtaccagccc ttcctcacca 650 cctgcgacgg gcaccgggcc tgcagcacct accgaaccat ctataggacc 700 gcctaccgcc gcagccctgg gctggcccct gccaggcctc gctacgcgtg 750 ctgccccggc tggaagagga ccagcgggct tcctggggcc tgtggagcag 800 caatatgcca gccgccatgc cggaacggag ggagctgtgt ccagcctggc 850 cgctgccgct gccctgcagg atggcggggt gacacttgcc agtcagatgt 900 ggatgaatgc agtgctagga ggggcggctg tccccagcgc tgcatcaaca 950 ccgccggcag ttactggtgc cagtgttggg aggggcacag cctgtctgca 1000 gacggtacac tctgtgtgcc caagggaggg ccccccaggg tggcccccaa 1050 cccgacagga gtggacagtg caatgaagga agaagtgcag aggctgcagt 1100 ccagggtgga cctgctggag gagaagctgc agctggtgct ggccccactg 1150 cacagootgg cotogoaggo actggagoat gggotocogg accooggoag 1200 ceteetggtg cacteettee ageagetegg eegeategae teeetgageg 1250 agcagatttc cttcctggag gagcagctgg ggtcctgctc ctgcaagaaa 1300 gactogtgac tgcccagege tccaggetgg actgagecee tcaegeegee 1350 ctgcagcccc catgcccctg cccaacatgc tgggggtcca gaagccacct 1400 cggggtgact gagcggaagg ccaggcaggg ccttcctcct cttcctcctc 1450

cccttcctcg ggaggctccc cagaccctgg catgggatgg gctgggatct 1500 tctctgtgaa tccaccctg gctacccca ccctggctac cccaacggca 1550 tcccaaggcc aggtggaccc tcagctgagg gaaggtacga gctccctgct 1600 ggagcctggg acccatggca caggccaggc agcccggagg ctgggtgggg 1650 cctcagtggg ggctgctgcc tgacccccag cacaataaaa atgaaacgtg 1700

<210> 508

<211> 273

<212> PRT

<213> Homo sapiens

<400> 508

Met Arg Gly Ser Gln Glu Val Leu Leu Met Trp Leu Leu Val Leu 1 5 10 15

Ala Val Gly Gly Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val 20 25 30

Cys Ala Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val 35 40 45

Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg
50 55 60

Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg 65 70 75

Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro 80 85 90

Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala 95 100 105

Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro
110 115 120

Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln 125 130 135

Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln
140 145 150

Arg Cys Ile Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu 155 160 165

Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly 170 175 180

Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala 185 190 195

Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu 200 205 210

```
Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala 225

Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu 240

Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu 255

Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Leu Gly Ser Cys Ser Cys Lys 270
```

Lys Asp Ser

<210> 509 <211> 1538 <212> DNA <213> Homo sapiens

(213/ HOMO Sapter

<400> 509 cccacqcqtc cqaaqctqqc cctqcacqqc tqcaaqqqaq qctcctqtqq 50 acaggccagg caggtgggcc tcaggaggtg cctccaggcg gccagtgggc 100 ctgaggcccc agcaagggct agggtccatc tccagtccca ggacacaqca 150 gcggccacca tggccacgcc tgggctccag cagcatcagc agcccccagg 200 accggggagg cacaggtggc ccccaccacc cggaggagca gctcctgccc 250 ctgtccgggg gatgactgat tctcctccgc caggccaccc agaggagaag 300 gccaccccgc ctggaggcac aggccatgag gggctctcag gaggtgctgc 350 tgatgtggct tctggtgttg gcagtgggcg gcacagagca cgcctaccgg 400 cccggccgta gggtgtgtgc tgtccgggct cacggggacc ctgtctccga 450 gtcgttcgtg cagcgtgtgt accagccctt cctcaccacc tgcgacgggc 500 accgggcctg cagcacctac cgaaccatct ataggaccgc ctaccgccgc 550 agccctgggc tggcccctgc caggcctcgc tacgcgtgct gccccggctg 600 gaagaggacc agcgggcttc ctggggcctg tggagcagca atatgccagc 650 cgccatgccg gaacggaggg agctgtgtcc agcctggccg ctgccgctgc 700 cctgcaggat ggcggggtga cacttgccag tcagatgtgg atgaatgcag 750 tgctaggagg ggcggctgtc cccagcgctg cgtcaacacc gccggcagtt 800 actggtgcca gtgttgggag gggcacagcc tgtctgcaga cggtacactc 850 tgtgtgccca agggaggcc ccccagggtg gcccccaacc cgacaggagt 900 ggacagtgca atgaaggaag aagtgcagag gctgcagtcc agggtggacc 950 tgctggagga gaagetgcag etggtgetgg ecceaetgca eageetggee 1000
tegeaggeae tggageatgg geteeeggae eeeggagee teetggtgea 1050
eteetteeag eageteggee geategaete eetgagegag eagatteet 1100
teetggagga geagetgggg teetgeteet geaagaaaga etegtgaetg 1150
eeeagegeee eaggetggae tgageeeete aegeegeeet geageeeeea 1200
tgeeeetgee eaacatgetg ggggteeaga ageeaeeteg gggtgaetga 1250
geggaaggee aggeagggee tteeteete teeteetee etteeteggg 1300
aggeteeea gaeeetggea tgggatgge tgggatette tetgtgaate 1350
eaeeeetgge taeeeeeaee etggetaeee eaaeggeate eeaaggeeag 1400
gtgggeeete agetgagga aggtaegage teeetgtgg ageetgggae 1450
eeatggeaea ggeeaggeag eeeggagget gggtgggee teagtgggg 1500
etgetgeetg aeeeeeagea eaataaaaat gaaaegtg 1538

<210> 510

<211> 273

<212> PRT

<213> Homo sapiens

<400> 510

Met Arg Gly Ser Gln Glu Val Leu Leu Met Trp Leu Leu Val Leu 1 5 10 15

Ala Val Gly Gly Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val 20 25 30

Cys Ala Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val
35 40 45

Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg
50 55 60

Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg 65 70 75

Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro 80 85 90

Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala 95 100 105

Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro 110 115 120

Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln 125 130 135

Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln

				140					145					150
Arg	Cys	Val	Asn	Thr 155	Ala	Gly	Ser	Tyr	Trp 160	Cys	Gln	Cys	Trp	Glu 165
Gly	His	Ser	Leu	Ser 170	Ala	Asp	Gly	Thr	Leu 175	Cys	Val	Pro	Lys	Gly 180
Gly	Pro	Pro	Arg	Val 185	Ala	Pro	Asn	Pro	Thr 190	Gly	Val	Asp	Ser	Ala 195
Met	Lys	Glu	Glu	Val 200	Gln	Arg	Leu	Gln	Ser 205	Arg	Val	Asp	Leu	Let 210
Glu	Glu	Lys	Leu	Gln 215	Leu	Val	Leu	Ala	Pro 220	Leu	His	Ser	Leu	Ala 225
Ser	Gln	Ala	Leu	Glu 230	His	Gly	Leu	Pro	Asp 235	Pro	Gly	Ser	Leu	Let 240
Val	His	Ser	Phe	Gln 245	Gln	Leu	Gly	Arg	Ile 250	Asp	Ser	Leu	Ser	Gl 25
Gln	Ile	Ser	Phe	Leu 260	Glu	Glu	Gln	Leu	Gly 265	Ser	Cys	Ser	Cys	Ly: 270
Lys	Asp	Ser												
<2102 <2112 <2122 <2132	> 21 > DN	Α	cial	Seq	uenc	e								
<220 <223		nthe	tic	olig	onuc	leot	ide	prob	е					
<4000 tgg			atat	gcca	gc c	21								
<211:	tggagcagca atatgccagc c 21 <210> 512 <211> 22 <212> DNA <213> Artificial Sequence													
<220: <223:		nthe	tic	olig	onuc	leot	ide	prob	e					
<400 ttt		.2 ictc	ctgt	cggg	rtt g	ıg 22	:							
<210 <211 <212 <213	> 46 > DN	ia Ia	cial	. Sec	quenc	e								
<220		-n+h-	++-	olio	tonii c	1100+	-ida	nrob	1 0					

```
<400> 513
ggtgacactt gccagtcaga tgtggatgaa tgcagtgcta ggaggg 46
<210> 514
<211> 2690
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 2039-2065
<223> unknown base
<400> 514
ggttgccaca gctggtttag ggccccgacc actggggccc cttgtcagga 50
ggagacagec teceggeeeg gggaggacaa gtegetgeea cetttggetg 100
 cegacgtqat tecetgggae ggtecgttte etgeegteag etgeeggeeg 150
 agttgggtct ccgtqtttca gqccggctcc cccttcctgg tctcccttct 200
 cccgctgqqc cqqtttatcq qqaqqagatt qtcttccaqq qctaqcaatt 250
 ggacttttga tgatgtttga cccagcggca ggaatagcag gcaacgtgat 300
 ttcaaagctg ggctcagcct ctgtttcttc tctcgtgtaa tcgcaaaacc 350
 cattttggag caggaattcc aatcatgtct gtgatggtgg tgagaaagaa 400
 ggtgacacgg aaatgggaga aactcccagg caggaacacc ttttgctgtg 450
 atggccgcgt catgatggcc cggcaaaagg gcattttcta cctgaccctt 500
 ttcctcatcc tggggacatg tacactcttc ttcgcctttg agtgccgcta 550
 cetggetgtt cagetgtctc etgccatece tgtatttgct gecatgetet 600
 tccttttctc catggctaca ctgttgagga ccagcttcag tgaccctgga 650
 gtgattcctc gggcgctacc agatgaagca gctttcatag aaatggagat 700
 agaagctacc aatggtgcgg tgccccaggg ccagcgacca ccgcctcgta 750
 tcaagaattt ccagataaac aaccagattg tgaaactgaa atactgttac 800
 acatgcaaga tcttccggcc tccccgggcc tcccattgca gcatctgtga 850
 caactgtgtg gagcgcttcg accatcactg cccctgggtg gggaattgtg 900
 ttggaaaqag gaactaccgc tacttctacc tcttcatcct ttctctctcc 950
 ctcctcacaa tctatgtctt cgccttcaac atcgtctatg tggccctcaa 1000
 atctttgaaa attggcttct tggagacatt gaaagaaact cctggaactg 1050
```

ttctagaagt cctcatttgc ttctttacac tctggtccgt cgtgggactg 1100

actggattte atacttteet egtggetete aaccagacaa ecaatgaaga 1150 catcaaagga tcatggacag ggaagaatcg cgtccagaat ccctacagcc 1200 atggcaatat tgtgaagaac tgctgtgaag tgctgtgtgg ccccttgccc 1250 cccagtgtgc tggatcgaag gggtattttg ccactggagg aaagtggaag 1300 togacctocc agtactcaag agaccagtag cagoctottg ccacagagec 1350 cageceecae agaacaeetg aacteaaatg agatgeegga ggacageage 1400 actocogaag agatgocaco tocagagoco coagagocac cacaggaggo 1450 agctgaagct gagaagtagc ctatctatgg aagagacttt tgtttgtgtt 1500 taattagggc tatgagagat ttcaggtgag aagttaaacc tgagacagag 1550 agcaagtaag ctgtcccttt taactgtttt tctttggtct ttagtcaccc 1600 agttgcacac tggcattttc ttgctgcaag cttttttaaa tttctgaact 1650 caaggcagtg gcagaagatg tcagtcacct ctgataactg gaaaaatggg 1700 tetettggge cetggeactg gttetecatg geeteageea eagggteece 1750 ttggaccccc tctcttccct ccagatccca gccctcctgc ttggggtcac 1800 tggtctcatt ctggggctaa aagtttttga gactggctca aatcctccca 1850 agetgetgea egtgetgagt ceagaggeag teacagagae etetggeeag 1900 qqqatcctaa ctqqqttctt qqqqtcttca qqactqaaqa qqaqqqaqaq 1950 tggggtcaga agattctcct ggccaccaag tgccagcatt gcccacaaat 2000 ccttttagga atgggacagg taccttccac ttgttgtann nnnnnnnnn 2050 nnnnnnnnn nnnnttgtt tttccttttg actcctgctc ccattaggag 2100 caggaatggc agtaataaaa gtctgcactt tggtcatttc ttttcctcag 2150 aggaageceg agtgeteact taaaeactat ecceteagae teeetgtgtg 2200 aggcctgcag aggccctgaa tgcacaaatg ggaaaccaag gcacagagag 2250 geteteetet cetetet eeceegatgt acceteaaaa aaaaaaaaat 2300 gctaaccagt tcttccatta agcctcggct gagtgaggga aagcccagca 2350 ctgctgccct ctcgggtaac tcaccctaag gcctcggccc acctctggct 2400 atggtaacca cactgggggc ttcctccaag ccccgctctt ccagcacttc 2450 caccggcaga gtcccagagc cacttcaccc tgggggtggg ctgtggcccc 2500 cagtcagctc tgctcaggac ctgctctatt tcagggaaga agatttatgt 2550

attatatgtg gctatatttc ctagagcacc tgtgttttcc tctttctaag 2600 ccagggtcct gtctggatga cttatgcggt gggggagtgt aaaccggaac 2650 ttttcatcta tttgaaggcg attaaactgt gtctaatgca 2690

<210> 515

<211> 364

<212> PRT

<213> Homo sapiens

<400> 515

Met Ser Val Met Val Val Arg Lys Lys Val Thr Arg Lys Trp Glu

1 5 10 15

Lys Leu Pro Gly Arg Asn Thr Phe Cys Cys Asp Gly Arg Val Met 20 25 30

Met Ala Arg Gln Lys Gly Ile Phe Tyr Leu Thr Leu Phe Leu Ile 35 40 45

Leu Gly Thr Cys Thr Leu Phe Phe Ala Phe Glu Cys Arg Tyr Leu 50 55 60

Ala Val Gln Leu Ser Pro Ala Ile Pro Val Phe Ala Ala Met Leu
65 70 75

Phe Leu Phe Ser Met Ala Thr Leu Leu Arg Thr Ser Phe Ser Asp 80 85 90

Pro Gly Val Ile Pro Arg Ala Leu Pro Asp Glu Ala Ala Phe Ile 95 100 105

Glu Met Glu Ile Glu Ala Thr Asn Gly Ala Val Pro Gln Gly Gln
110 115 120

Arg Pro Pro Pro Arg Ile Lys Asn Phe Gln Ile Asn Asn Gln Ile 125 130 135

Val Lys Leu Lys Tyr Cys Tyr Thr Cys Lys Ile Phe Arg Pro Pro 140 145 150

Arg Ala Ser His Cys Ser Ile Cys Asp Asn Cys Val Glu Arg Phe 155 160 165

Asp His His Cys Pro Trp Val Gly Asn Cys Val Gly Lys Arg Asn 170 175 180

Tyr Arg Tyr Phe Tyr Leu Phe Ile Leu Ser Leu Ser Leu Leu Thr 185 190 195

Ile Tyr Val Phe Ala Phe Asn Ile Val Tyr Val Ala Leu Lys Ser 200 205 210

Leu Lys Ile Gly Phe Leu Glu Thr Leu Lys Glu Thr Pro Gly Thr 215 220 225

Val Leu Glu Val Leu Ile Cys Phe Phe Thr Leu Trp Ser Val Val

230 235 240

Gly Leu Thr Gly Phe His Thr Phe Leu Val Ala Leu Asn Gln Thr 245 250 255

Thr Asn Glu Asp Ile Lys Gly Ser Trp Thr Gly Lys Asn Arg Val 260 265 270

Gln Asn Pro Tyr Ser His Gly Asn Ile Val Lys Asn Cys Cys Glu 275 280 285

Val Leu Cys Gly Pro Leu Pro Pro Ser Val Leu Asp Arg Gly 290 295 300

Ile Leu Pro Leu Glu Glu Ser Gly Ser Arg Pro Pro Ser Thr Gln 305 310 315

Glu Thr Ser Ser Ser Leu Leu Pro Gln Ser Pro Ala Pro Thr Glu 320 325 330

His Leu Asn Ser Asn Glu Met Pro Glu Asp Ser Ser Thr Pro Glu 335 340 345

Glu Met Pro Pro Glu Pro Pro Glu Pro Pro Gln Glu Ala Ala 350 355 360

Glu Ala Glu Lys

<210> 516

<211> 255

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 36, 38, 88, 118, 135, 193, 213, 222

<223> unknown base

<400> 516

aaaaccctgt attittaca atgcaaatag acaatnance tggaggtett 50 tgaattaggt attataggga tggtggggtt gattitintt cetggagget 100 tttggettig gactetenet tteteceaca gagenetteg aceateactg 150 eeeetgggtg gggaattgtg ttggaaagag gaactacege tantictace 200 tetteateet tintetetee enceteacaa tetatgtett egeetteaac 250 ategt 255

<210> 517

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

```
<223> Synthetic oligonucleotide probe
<400> 517
caacgtgatt tcaaagctgg gctc 24
<210> 518
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 518
 gcctcgtatc aagaatttcc 20
<210> 519
<211> 18
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 519
 agtggaagtc gacctccc 18
<210> 520
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 520
 ctcacctgaa atctctcata gccc 24
<210> 521
<211> 50
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 521
 cgcaaaaccc attttgggag caggaattcc aatcatgtct gtgatggtgg 50
<210> 522
<211> 1679
<212> DNA
<213> Homo sapiens
<400> 522
 gttgtgtcct tcagcaaaac agtggattta aatctccttg cacaagcttg 50
 agagcaacac aatctatcag gaaagaaaga aagaaaaaaa ccgaacctga 100
```

caaaaaagaa gaaaaagaag aagaaaaaaa atcatgaaaa ccatccagcc 150 aaaaatgcac aattctatct cttgggcaat cttcacgggg ctggctgctc 200 tgtgtctctt ccaaggagtg cccgtgcgca gcggagatgc caccttcccc 250 aaagctatgg acaacgtgac ggtccggcag ggggagagcg ccaccctcag 300 gtgcactatt gacaaccggg tcacccgggt ggcctggcta aaccgcagca 350 ccatcctcta tgctgggaat gacaagtggt gcctggatcc tcgcgtggtc 400 cttctgagca acacccaaac gcagtacagc atcgagatcc agaacgtgga 450 tgtgtatgac gagggccctt acacctgctc ggtgcagaca gacaaccacc 500 caaagacctc tagggtccac ctcattgtgc aagtatctcc caaaattgta 550 gagatttctt cagatatctc cattaatgaa gggaacaata ttagcctcac 600 ctgcatagca actggtagac cagagcctac ggttacttgg agacacatct 650 ctcccaaagc ggttggcttt gtgagtgaag acgaatactt ggaaattcag 700 ggcatcaccc gggagcagtc aggggactac gagtgcagtg cctccaatga 750 cgtggccgcg cccgtggtac ggagagtaaa ggtcaccgtg aactatccac 800 catacatttc agaagccaag ggtacaggtg tccccgtggg acaaaagggg 850 acactgcagt gtgaagcctc agcagtcccc tcagcagaat tccagtggta 900 caaggatgac aaaagactga ttgaaggaaa gaaaggggtg aaagtggaaa 950 acagacettt ceteteaaaa eteatettet teaatgtete tgaacatgae 1000 tatgggaact acacttgcgt ggcctccaac aagctgggcc acaccaatgc 1050 cagcatcatg ctatttggtc caggcgccgt cagcgaggtg agcaacggca 1100 cgtcgaggag ggcaggctgc gtctggctgc tgcctcttct ggtcttgcac 1150 ctgcttctca aattttgatg tgagtgccac ttccccaccc gggaaaggct 1200 gccgccacca ccaccaccaa cacaacagca atggcaacac cgacagcaac 1250 caatcagata tatacaaatg aaattagaag aaacacagcc tcatgggaca 1300 gaaatttgag ggaggggaac aaagaatact ttggggggaa aagagtttta 1350 aaaaagaaat tgaaaattgc cttgcagata tttaggtaca atggagtttt 1400 cttttcccaa acgggaagaa cacagcacac ccggcttgga cccactgcaa 1450 gctgcatcgt gcaacctctt tggtgccagt gtgggcaagg gctcagcctc 1500 tetgeceaca gagtgeece acgtggaaca ttetggaget ggecateeca 1550 aattcaatca gtccatagag acgaacagaa tgagaccttc cggcccaagc 1600 gtggcgctgc gggcactttg gtagactgtg ccaccacggc gtgtgttgtg 1650 aaacgtgaaa taaaaagagc aaaaaaaaa 1679

<210> 523

<211> 344

<212> PRT

<213> Homo sapiens

<400> 523

Met Lys Thr Ile Gln Pro Lys Met His Asn Ser Ile Ser Trp Ala 1 5 10 15

Ile Phe Thr Gly Leu Ala Ala Leu Cys Leu Phe Gln Gly Val Pro 20 25 30

Val Arg Ser Gly Asp Ala Thr Phe Pro Lys Ala Met Asp Asn Val 35 40 45

Thr Val Arg Gln Gly Glu Ser Ala Thr Leu Arg Cys Thr Ile Asp 50 55 60

Asn Arg Val Thr Arg Val Ala Trp Leu Asn Arg Ser Thr Ile Leu 65 70 75

Tyr Ala Gly Asn Asp Lys Trp Cys Leu Asp Pro Arg Val Val Leu 80 85 90

Leu Ser Asn Thr Gln Thr Gln Tyr Ser Ile Glu Ile Gln Asn Val $95 \hspace{1.5cm} 100 \hspace{1.5cm} 105$

Asp Val Tyr Asp Glu Gly Pro Tyr Thr Cys Ser Val Gln Thr Asp 110 115 120

Asn His Pro Lys Thr Ser Arg Val His Leu Ile Val Gln Val Ser 125 130 135

Pro Lys Ile Val Glu Ile Ser Ser Asp Ile Ser Ile Asn Glu Gly
140 145 150

Asn Asn Ile Ser Leu Thr Cys Ile Ala Thr Gly Arg Pro Glu Pro 155 160 165

Thr Val Thr Trp Arg His Ile Ser Pro Lys Ala Val Gly Phe Val 170 175 180

Ser Glu Asp Glu Tyr Leu Glu Ile Gln Gly Ile Thr Arg Glu Gln 185 190 195

Ser Gly Asp Tyr Glu Cys Ser Ala Ser Asn Asp Val Ala Ala Pro 200 205 210

Val Val Arg Arg Val Lys Val Thr Val Asn Tyr Pro Pro Tyr Ile 215 220 225

Ser Glu Ala Lys Gly Thr Gly Val Pro Val Gly Gln Lys Gly Thr

	230				235					240
Leu Gln Cys Glu	Ala Ser 245	Ala	Val	Pro	Ser 250	Ala	Glu	Phe	Gln	Trp 255
Tyr Lys Asp Asp	Lys Arg 260	Leu	Ile	Glu	Gly 265	Lys	Lys	Gly	Val	Lys 270
Val Glu Asn Arg	Pro Phe 275	Leu	Ser	Lys	Leu 280	Ile	Phe	Phe	Asn	Val 285
Ser Glu His Asp	Tyr Gly 290	Asn	Tyr	Thr	Cys 295	Val	Ala	Ser	Asn	Lys 300
Leu Gly His Thr	Asn Ala	Ser	Ile	Met	Leu 310	Phe	Gly	Pro	Gly	Ala 315
Val Ser Glu Val	Ser Asr 320	Gly	Thr	Ser	Arg 325	Arg	Ala	Gly	Cys	Val 330
Trp Leu Leu Pro	Leu Leu 335	ı Val	Leu	His	Leu 340	Leu	Leu	Lys	Phe	
<210> 524 <211> 503 <212> DNA <213> Homo sapie	ns									
<400> 524 gaaaaaaaat catg	aaaacc a	tcca	gccaa	a aa	atgca	acaa	ttc	tatc	tct	50
tgggcaatct tcac	ggggct g	gctg	ctct	g tg	tctc	ttcc	aag	gagt	gcc	100
cgtgcgcagc ggag	atgcca (cttc	ccca	a ag	ctate	ggac	aac	gtga	cgg	150
tccggcaggg ggag	agcgcc a	accct	cagg	t gc	acta	ttga	caa	ccgg	gtc	200
accegggtgg cetg	gctaaa (cgca	gcac	c at	cctc	tatg	ctg	ggaa	tga	250
caagtggtgc ctgg	atcctc q	gcgtg	gtcc	t tc	tgag	caac	acc	caaa	cgc	300
agtacagcat cgag	atccag a	acgt	ggat	g tg	tatg	acga	ggg	ccct	tac	350
acctgctcgg tgca	gacaga (caacc	accc	a aa	gacc	tcta	ggg.	tcca	cct	400
cattgtgcaa gtat	ctccca a	aatt	gtaga	a ga	tttc	ttca	gat	atct	cca	450
ttaatgaagg gaac	aatatt a	agcct	cacc	t gc	atag	caac	tgg	taga	cca	500
gag 503										
<210> 525 <211> 2602 <212> DNA <213> Homo sapie	ns									

380

 $<\!\!400\!\!> 525$ atggctggtg acggcgggc cggccagggg accggggccg cggcccggga 50

gcgggccagc tgccgggagc cctgaatcac cgcctggccc gactccacca 100 tgaacgtcgc gctgcaggag ctgggagctg gcagcaacgt gggattccag 150 aaggggacaa gacagctgtt aggctcacgc acgcagctgg agctggtctt 200 ageaggtgcc tetetactgc tggctgcact gcttctgggc tgccttgtgg 250 ccctaggggt ccagtaccac agagacccat cccacagcac ctgccttaca 300 gaggeetgea ttegagtgge tggaaaaate etggagteee tggaeegagg 350 ggtgagcccc tgtgaggact tttaccagtt ctcctgtggg ggctggattc 400 ggaggaaccc cctgcccgat gggcgttctc gctggaacac cttcaacagc 450 ctctgggacc aaaaccaggc catactgaag cacctgcttg aaaacaccac 500 cttcaactcc agcagtgaag ctgagcagaa gacacagcgc ttctacctat 550 cttgcctaca ggtggagcgc attgaggagc tgggagccca gccactgaga 600 gacctcattg agaagattgg tggttggaac attacggggc cctgggacca 650 ggacaacttt atggaggtgt tgaaggcagt agcagggacc tacagggcca 700 ccccattett caccgtetac atcagtgccg actetaagag ttccaacage 750 aatgttatcc aggtggacca gtctgggctc tttctgccct ctcgggatta 800 ctacttaaac agaactgcca atgagaaagt gctcactgcc tatctggatt 850 acatggagga actggggatg ctgctgggtg ggcggcccac ctccacgagg 900 gagcagatgc agcaggtgct ggagttggag atacagctgg ccaacatcac 950 agtgccccag gaccagcggc gcgacgagga gaagatctac cacaagatga 1000 gcatttegga getgeagget etggegeeet ceatggactg gettgagtte 1050 ctgtctttct tgctgtcacc attggagttg agtgactctg agcctgtggt 1100 ggtgtatggg atggattatt tgcagcaggt gtcagagctc atcaaccgca 1150 cggaaccaag catcctgaac aattacctga tctggaacct ggtgcaaaag 1200 acaacctcaa gcctggaccg acgctttgag tctgcacaag agaagctgct 1250 ggagaccete tatggcacta agaagteetg tgtgeegagg tggeagacet 1300 gcatctccaa cacggatgac gcccttggct ttgctttggg gtcactcttc 1350 gtgaaggcca cgtttgaccg gcaaagcaaa gaaattgcag aggggatgat 1400 cagcgaaatc cggaccgcat ttgaggaggc cctgggacag ctggtttgga 1450 tggatgagaa gacccgccag gcagccaagg agaaagcaga tgccatctat 1500

gatatgattg gtttcccaga ctttatcctg gagcccaaag agctggatga 1550 tgtttatgac qggtacgaaa tttctgaaga ttctttcttc caaaacatgt 1600 tgaatttgta caacttctct gccaaggtta tggctgacca gctccgcaag 1650 cctcccagcc gagaccagtg gagcatgacc ccccagacag tgaatgccta 1700 ctaccttcca actaagaatg agatcgtctt ccccgctggc atcctgcagg 1750 cccccttcta tgcccgcaac caccccaagg ccctgaactt cggtggcatc 1800 ggtgtggtca tgggccatga gttgacgcat gcctttgatg accaagggcg 1850 cgagtatgac aaagaaggga acctgcggcc ctggtggcag aatgagtccc 1900 tggcagcctt ccggaaccac acggcctgca tggaggaaca gtacaatcaa 1950 taccaggtca atggggagag gctcaacggc cgccagacgc tgggggagaa 2000 cattactgac aacgggggc tgaaggctgc ctacaatgct tacaaagcat 2050 ggctgagaaa gcatggggag gagcagcaac tgccagccgt ggggctcacc 2100 aaccaccage tettettegt gggatttgce caggtgtggt geteggteeg 2150 cacaccagag ageteteacg aggggetggt gaccgacccc cacagccetg 2200 cccgcttccg cqtqctqqqc actctctca actcccqtqa cttcctqcqq 2250 cacttegget geeetgtegg etececeatg aacceaggge agetgtgtga 2300 ggtgtggtag acctggatca ggggagaaat ggccagctgt caccagacct 2350 ggggcagctc tcctgacaaa gctgtttgct cttgggttgg gaggaagcaa 2400 atgcaagctg ggctgggtct agtccctccc ccccacaggt gacatgagta 2450 cagaccetee teaateacea cattgtgeet etgetttggg ggtgeeeetg 2500 cctccagcag agcccccacc attcactgtg acatctttcc gtgtcaccct 2550 gcctggaaga ggtctgggtg gggaggccag ttcccatagg aaggagtctg 2600

cc 2602 <210> 526

<211> 736

<212> PRT

<213> Homo sapiens

<400> 526

Phe Gln Lys Gly Thr Arg Gln Leu Leu Gly Ser Arg Thr Gln Leu 20 25 30

Glu Leu Val Leu Ala Gly Ala Ser Leu Leu Leu Ala Ala Leu Leu Leu Gly Cys Leu Val Ala Leu Gly Val Gln Tyr His Arg Asp Pro Ser His Ser Thr Cys Leu Thr Glu Ala Cys Ile Arg Val Ala Gly Lys Ile Leu Glu Ser Leu Asp Arg Gly Val Ser Pro Cys Glu Asp Phe Tyr Gln Phe Ser Cys Gly Gly Trp Ile Arg Arg Asn Pro Leu 100 Pro Asp Gly Arg Ser Arg Trp Asn Thr Phe Asn Ser Leu Trp Asp 115 Gln Asn Gln Ala Ile Leu Lys His Leu Leu Glu Asn Thr Thr Phe 125 1.30 Asn Ser Ser Ser Glu Ala Glu Gln Lys Thr Gln Arg Phe Tyr Leu 140 Ser Cys Leu Gln Val Glu Arg Ile Glu Glu Leu Gly Ala Gln Pro 155 Leu Arg Asp Leu Ile Glu Lys Ile Gly Gly Trp Asn Ile Thr Gly 170 Pro Trp Asp Gln Asp Asn Phe Met Glu Val Leu Lys Ala Val Ala Gly Thr Tyr Arg Ala Thr Pro Phe Phe Thr Val Tyr Ile Ser Ala Asp Ser Lys Ser Ser Asn Ser Asn Val Ile Gln Val Asp Gln Ser Gly Leu Phe Leu Pro Ser Arg Asp Tyr Tyr Leu Asn Arg Thr Ala Asn Glu Lys Val Leu Thr Ala Tyr Leu Asp Tyr Met Glu Glu Leu Gly Met Leu Leu Gly Gly Arg Pro Thr Ser Thr Arg Glu Gln Met Gln Gln Val Leu Glu Leu Glu Ile Gln Leu Ala Asn Ile Thr Val 280 Pro Gln Asp Gln Arg Arg Asp Glu Glu Lys Ile Tyr His Lys Met Ser Ile Ser Glu Leu Gln Ala Leu Ala Pro Ser Met Asp Trp Leu 305 310 Glu Phe Leu Ser Phe Leu Leu Ser Pro Leu Glu Leu Ser Asp Ser

	320					325					330
Glu Pro Val	Val Val 335	Tyr	Gly	Met	Asp	Tyr 340	Leu	Gln	Gln	Val	Ser 345
Glu Leu Ile	Asn Arg 350	Thr	Glu	Pro	Ser	Ile 355	Leu	Asn	Asn	Tyr	Leu 360
Ile Trp Asn	Leu Val 365	Gln	Lys	Thr	Thr	Ser 370	Ser	Leu	Asp	Arg	Arg 375
Phe Glu Ser	Ala Gln 380	Glu	Lys	Leu	Leu	Glu 385	Thr	Leu	Tyr	Gly	Thr 390
Lys Lys Ser	Cys Val 395	Pro	Arg	Trp	Gln	Thr 400	Cys	Ile	Ser	Asn	Thr 405
Asp Asp Ala	Leu Gly 410	Phe	Ala	Leu	Gly	Ser 415	Leu	Phe	Val	Lys	Ala 420
Thr Phe Asp	Arg Gln 425	Ser	Lys	Glu	Ile	Ala 430	Glu	Gly	Met	Ile	Ser 435
Glu Ile Arg	Thr Ala 440	Phe	Glu	Glu	Ala	Leu 445	Gly	Gln	Leu	Val	Trp 450
Met Asp Glu	Lys Thr 455	Arg	Gln	Ala	Ala	Lys 460	Glu	Lys	Ala	Asp	Ala 465
Ile Tyr Asp	Met Ile 470	Gly	Phe	Pro	Asp	Phe 475	Ile	Leu	Glu	Pro	Lys 480
Glu Leu Asp	Asp Val 485	Tyr	Asp	Gly	Tyr	Glu 490	Ile	Ser	Glu	Asp	Ser 495
Phe Phe Gln	Asn Met 500	Leu	Asn	Leu	Tyr	Asn 505	Phe	Ser	Ala	Lys	Val 510
Met Ala Asp	Gln Leu 515	Arg	Lys	Pro	Pro	Ser 520	Arg	Asp	Gln	Trp	Ser 525
Met Thr Pro	Gln Thr 530	Val	Asn	Ala	Tyr	Tyr 535	Leu	Pro	Thr	Lys	Asn 540
Glu Ile Val	Phe Pro 545	Ala	Gly	Ile	Leu	Gln 550	Ala	Pro	Phe	Tyr	Ala 555
Arg Asn His	Pro Lys 560	Ala	Leu	Asn	Phe	Gly 565	Gly	Ile	Gly	Val	Val 570
Met Gly His	Glu Leu 575	Thr	His	Ala	Phe	Asp 580	Asp	Gln	Gly	Arg	Glu 585
Tyr Asp Lys	Glu Gly 590	Asn	Leu	Arg	Pro	Trp 595	Trp	Gln	Asn	Glu	Ser 600
Leu Ala Ala	Phe Arg 605	Asn	His	Thr	Ala	Cys 610	Met	Glu	Glu	Gln	Tyr 615

```
Asn Gln Tyr Gln Val Asn Gly Glu Arg Leu Asn Gly Arg Gln Thr
Leu Gly Glu Asn Ile Thr Asp Asn Gly Gly Leu Lys Ala Ala Tyr
                                                         645
                635
Asn Ala Tyr Lys Ala Trp Leu Arg Lys His Gly Glu Glu Gln Gln
                                     655
Leu Pro Ala Val Gly Leu Thr Asn His Gln Leu Phe Phe Val Gly
                                                         675
Phe Ala Gln Val Trp Cys Ser Val Arg Thr Pro Glu Ser Ser His
                680
                                     685
Glu Gly Leu Val Thr Asp Pro His Ser Pro Ala Arg Phe Arg Val
                                                         705
Leu Gly Thr Leu Ser Asn Ser Arg Asp Phe Leu Arg His Phe Gly
Cys Pro Val Gly Ser Pro Met Asn Pro Gly Gln Leu Cys Glu Val
                                                         735
Trp
```

<210> 527

<211> 4308

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 1478, 3978, 4057-4058, 4070

<223> unknown base

<400> 527

georgecet cegecetecy eacteorge teectecte egecegetee 50
cgegecetec teectecte eteecaget gteecgtteg egteatgeeg 100
ageotecegg eccegegge eccegetgetg eteeteggge tgetgetget 150
cggetecegg ecggeceggg gegeeggee agagecece gtgetgeea 200
teegttetga gaaggageeg etgeecgtte ggggagegge aggtaggtgg 250
gegeecgggg gaggegggg egggagteg ggetegggge gagteagege 300
cageecggag ggggegegg gegeaggtgg eteggeggg egggegee 350
ggagggtggg egggggeaga agggegggt geetgggae egggaeeege 400
gggeageece eggggegga eacggegga getgggaaggte tatgeettgg 500
caageeegte eccgeagget geaeettegg egggaaggte tatgeettgg 500

acgagacgtg gcacccggac ctaggggagc cattcggggt gatgcgctgc 550 gtgctgtgcg cctgcgaggc gcagtggggt cgccgtacca ggggccctgg 600 cagggtcagc tgcaagaaca tcaaaccaga gtgcccaacc ccggcctgtg 650 ggcagecgcg ccagctgccg ggacactgct gccagacctg cccccaggac 700 ttcgtggcgc tgctgacagg gccgaggtcg caggcggtgg cacgagcccg 750 agtotegetg etgegeteta geeteegett etetatetee tacaggegge 800 tggaccgccc taccaggatc cgcttctcag actccaatgg cagtgtcctg 850 tttgagcacc ctgcagcccc cacccaagat ggcctggtct gtggggtgtg 900 gegggeagtg ceteggttgt etetgegget cettagggea gaacagetge 950 atgtggcact tgtgacactc actcaccctt caggggaggt ctgggggcct 1000 ctcatccggc accgggccct gtccccagag accttcagtg ccatcctgac 1050 tctagaaggc ccccaccagc agggcgtagg gggcatcacc ctgctcactc 1100 tcagtgacac agaggactcc ttgcattttt tgctgctctt ccgaggcctt 1150 gcaggactaa cccaggttcc cttgaggctc cagattctac accaggggca 1200 gctactgcga gaacttcagg ccaatgtctc agcccaggaa ccaggctttg 1250 ctgaggtgct gcccaacctg acagtccagg agatggactg gctggtgctg 1300 ggggagctgc agatggccct ggagtgggca ggcaggccag ggctgcgcat 1350 cagtggacac attgctgcca ggaagagctg cgacgtcctg caaagtgtcc 1400 tttgtggggc taatgccctg atcccagtcc aaacgggtgc tgccggctca 1450 gccagcctca ctctgctagg aaatggcncc ctgatcctcc aggtgcaatt 1500 ggtagggaca accagtgagg tggtggccat gacactggaa accaagcctc 1550 ageggaggga teageceact gteetgtgee acatggetgg cetatectee 1600 cctgcccca ggccgtgggt atctgccctg ggctggggtg cccgaggggc 1650 tcatatgctg ctgcagaatg agctcttcct gaacgtgggc accaaggact 1700 tcccagacgg agagettcgg gggcaacgtg getgccctgc cctactgtgg 1750 ggcatagege eegecetgee egtgeeecta geaggageee tggtgetace 1800 ccctgtgaag agccaagcag cagggcacgc ctggctttcc ttggataccc 1850 actgtcacct gcactatgaa gtgctgctgg ctgggcttgg tggctcagaa 1900 caaggcactg tcactgccca cctccttggg cctcctggaa cgccagggcc 1950

tcggcggctg ctgaagggat tctatggctc agaggcccag ggtgtggtga 2000 aggacctgga gccggaactg ctgcggcacc tggcaaaagg catggcttcc 2050 ctgatgatca ccaccaaggt agccccagag gggagctccg agggcagcct 2100 ctcctcccag gtgcacatag ccaaccaatg tgaggttggc ggactgcgcc 2150 tggaggcggc cggggccgag ggggtgcggg cgctgggggc tccggataca 2200 gcctctgctg cgccgcctgt ggtgcctggt ctcccggccc tagcgcccgc 2250 caaacctggt ggtcctgggc ggccccgaga ccccaacaca tgcttcttcg 2300 aggggcagca gcgccccac ggggctcgct gggcgcccaa ctacgacccg 2350 ctctgctcac tctgcacctg ccagagacga acggtgatct gtgacccggt 2400 ggtgtgccca ccgcccagct gcccacaccc ggtgcaggct cccgaccagt 2450 gctgccctgt ttgccctggc tgctattttg atggtgaccg gagctggcgg 2500 gcagcgggta cgcggtggca ccccgttgtg cccccctttg gcttaattaa 2550 gtgtgctgtc tgcacctgca agcagggggg cactggagag gtgcactgtg 2600 agaaggtgca gtgtccccgg ctggcctgtg cccagcctgt gcgtgtcaac 2650 cccaccgact gctgcaaaca gtgtccaggt gaggcccacc cccagctggg 2700 ggaccccatg caggetgatg ggccccgggg ctgccgtttt gctgggcagt 2750 ggttcccaga gagtcagagc tggcacccct cagtgccccc gtttggagag 2800 atgagetgta teacetgeag atgtggggta agtggggage agaggettgt 2850 gtgaggtggg tactgggagc ctggtctgga gtagggagac cttcccaggg 2900 aggtccctga agaagctgaa ggtcactgtg tcccagtgcc tctgggggac 2950 actcagtgtc tgctctgtct tgtaccaggc aggggtgcct cactgtgagc 3000 gggatgactg ttcactgcca ctgtcctgtg gctcggggaa ggagagtcga 3050 tgctgttccc gctgcacggc ccaccggcgg cgtaagtgag ggagtccagg 3100 gtcagcaget gtgagtggag ggctcacctg cctgtgggac tcctgatcag 3150 ggaagggagc actcactgtg tgcaggaaca gtgcagcctg cctcacaagt 3200 gccattccaa tccaccctca cagcaacctg gtggaattgt tatttatgac 3250 cttttcttta caaatgagat ttctgaagct cagagaaatt aagcaacgag 3300 atgaaggtca cccagctgtg tgcactgacc tgtttagaaa atactggcct 3350 ttctgggacc aaggcaggga tgctttgccc tgccctctat gcctctctgt 3400

agcagececa gagaceagaa etgateeaga getggagaaa gaageegaag 3500 gctcttaggg agcagccaga gggccaagtg accaagagga tggggcctga 3550 gctggggaag gggtggcatc gaggaccttc ttgcattctc ctgtgggaag 3600 cccagtgcct ttgctcctct gtcctgcctc tactcccacc cccactacct 3650 ctgggaacca cagctccaca agggggagag gcagctgggc cagaccgagg 3700 tcacagccac tccaagtcct gccctgccac cctcggcctc tgtcctggaa 3750 gccccacccc tttcttcctg tacataatgt cactggcttg ttgggatttt 3800 taatttatct tcactcagca ccaagggccc cggacactcc actcctgctg 3850 cccctqaqct qaqcaqaqtc attattqqaq aqttttqtat ttattaaaac 3900 atttcttttt cagtctttgg gcatgaggtt ggctctttgt ggccaggaac 3950 ctgagtgggg cctggtggag aaggggcnga gagtaggagg tgagagagag 4000 gagctctgac acttggggag ctgaaagaga cctggagagg cagaggatag 4050 cqtqqcnntt qqctqqcatn cctqqqttcc qcaqagqgqc tqgqqatgqt 4100 tcttgagatg gtctagagac tcaagaattt agggaagtag aagcaggatt 4150 ttgactcaag tttagtttcc cacatcgctg gcctgtttgc tgacttcatg 4200 tttgaagttg ctccagagag agaatcaaag gtgtcaccag cccctctctc 4250 catcattace tteacttace tttattace teccatecee teccatecee 4300

tcccctcc 4308

<210> 528

<211> 1285

<212> DNA

<213> Homo sapiens

<400> 528

ggccgagcgg gggtgctgcg cggcggccgt gatggctggt gacggcgggg 50 ccgggcaggg gaccggggcc gcggcccggg agcgggccag ctgccgggag 100 ccctgaatca ccgcctggcc cgactccacc atgaacgtcg cgctgcagga 150 gctgggagct ggcagcaacg tgggattcca gaaggggaca agacagctgt 200 taggctcacg cacgcagctg gagctggtct tagcaggtgc ctctctactg 250 ctggctgcac tgcttctggg ctgccttgtg gccctagggg tccagtacca 300 cagagaccca tcccacagca cctgccttac agaggcctgc attcgagtgg 350

ctggaaaaat cctggagtcc ctggaccgag gggtgagccc ctgtgaggac 400 ttttaccagt tctcctgtgg gggctggatt cggaggaacc ccctgcccga 450 tgggcgttct cgctggaaca ccttcaacag cctctgggac caaaaccagg 500 ccatactgaa gcacctgctt gaaaacacca ccttcaactc cagcagtgaa 550 gctgagcaga agacacagcg cttctaccta tcttgcctac aggtggagcg 600 cattgaggag ctgggagccc agccactgag agacctcatt gagaagattg 650 gtggttggaa cattacgggg ccctgggacc aggacaactt tatggaggtg 700 ttgaaggcag tagcagggac ctacagggcc accccattct tcaccgtcta 750 catcagtgcc gactctaaga gttccaacag caatgttatc caggtggacc 800 agtetggget etttetgece tetegggatt actaettaaa cagaactgee 850 aatgagaaag taaggaacat cttccgaacc cccatcccta cccctggctg 900 agctgggctg atccctgttg acttttccct ttgccaaggg tcagagcagg 950 gaaggtgagc ctatcctgtc acctagtgaa caaactgccc ctcctttctt 1000 ttcctcttat tcttctagta ggtttcatag acacctactg tgtgccaggt 1100 ccagtggggg aattcggaga tataagtttc cgagccattg ccacaggaag 1150 cgttcagtgt cgatgggttc atggacctag ataggctgat aacaaagctc 1200 acaagagggt cctgaggatt caggagagac ttatggagcc agcaaagtct 1250 tcctgaagag attgcatttg agccaggtcc tgtag 1285

<210> 529

<211> 1380

<212> DNA

<213> Homo sapiens

<400> 529

atgectacta cettecaact aagaatgaga tegtetteee egetggeate 50 etgeaggeee eettetatge eegeaaceae eecaaggeee tgaacttegg 100 tggeateggt gtggteatgg gecatgagtt gaegeatgee tttgatgace 150 aagggegega gtatgacaaa gaagggaace tgeggeeetg gtggeagaat 200 gagteeetgg eageetteeg gaaceacaeg geetgeatgg aggaacagta 250 caateaatae eaggteaatg gggagagget eaaeggeege eagaegetgg 300 gggagaacat tgetgacaac ggggggetga aggetgeeta eaatgettae 350

```
aaagcatggc tgagaaagca tggggaggag cagcaactgc cagccgtggg 400
gctcaccaac caccagctct tcttcgtggg atttgcccag gtgtggtgct 450
cggtccgcac accagagagc tctcacgagg ggctggtgac cgacccccac 500
agecetgeec getteegegt getgggeact etetecaact ecegtgaett 550
cctgcggcac ttcggctgcc ctgtcggctc ccccatgaac ccagggcagc 600
tgtgtgaggt gtggtagacc tggatcaggg gagaaatggc cagctgtcac 650
cagacctggg gcagctctcc tgacaaagct gtttgctctt gggttgggag 700
gaagcaaatg caagctgggc tgggtctagt ccctccccc cacaggtgac 750
atgagtacag accetectea ateaceaeat tgtgcetetg etttgggggt 800
geceetgeet ecageagage ecceaceatt caetgtgaea tettteegtg 850
tcaccctgcc tggaagaggt ctgggtgggg aggccagttc ccataggaag 900
gagtetgeet ettetgteec caggeteact cageetggeg gecatgggge 950
ctgccgtgcc tgccccactg tgacccacag gcctgggtgg tgtacctcct 1000
ggacttetee ceaggeteae teagtgegea ettaggggtg gacteagete 1050
tgtctggctc accetcacgg gctaccecca cetcaccetg tgctcettgt 1100
gccactgctc ccagtgctgc tgctgacctt cactgacagc tcctagtgga 1150
agcccaaggg cctctgaaag cctcctgctg cccactgttt ccctgggctg 1200
agaggggaag tgcatatgtg tagcgggtac tggttcctgt gtcttagggc 1250
acaagcctta gcaaatgatt gattctccct ggacaaagca ggaaagcaga 1300
tagagcaggg aaaaggaaga acagagttta tttttacaga aaagagggtg 1350
ggagggtgtg gtcttggccc ttataggacc 1380
```

- <210> 530
- <211> 39
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 530
- gaagcagtgc agccagcagt agagaggcac ctgctaaga 39
- <210> 531
- <211> 24
- <212> DNA
- <213> Artificial Sequence

```
<220>
<223> Synthetic oligonucleotide probe
<400> 531
acgcagctgg agctggtctt agca 24
<210> 532
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 532
 ggtactggac ccctagggcc acaa 24
<210> 533
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 533
 cctcccagcc gagaccagtg g 21
<210> 534
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 534
 ggtcctataa gggccaagac c 21
<210> 535
<211> 44
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 535
 <210> 536
 <211> 16
 <212> DNA
 <213> Artificial Sequence
 <223> Synthetic oligonucleotide probe
```

```
The state of the s
```

```
<400> 536
 cggacgcgtg ggtcga 16
<210> 537
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 537
cggccgtgat ggctggtgac g 21
<210> 538
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 538
ggcagactcc ttcctatggg 20
<210> 539
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 539
 ggcacttcat ggtccttgaa a 21
<210> 540
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 540
cggatgtgtg tgaggccatg cc 22
<210> 541
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 541
 gaaagtaacc acggaggtca agat 24
```

```
<210> 542
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 542
cctcctccga gactgaaagc t 21
<210> 543
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 543
tcgcgttgct ttttctcgcg tg 22
<210> 544
<211> 17
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 544
 gcgtgcgtca ggttcca 17
<210> 545
<211> 19
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 545
 cgttcgtgca gcgtgtgta 19
<210> 546
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 546
 cttcctcacc acctgcgacg gg 22
<210> 547
<211> 23
<212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 547
ggtaggcggt cctatagatg gtt 23
<210> 548
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 548
 agatgtggat gaatgcagtg cta 23
<210> 549
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 549
 atcaacaccg ccggcagtta ctgg 24
<210> 550
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 550
 acagagtgta ccgtctgcag aca 23
<210> 551
 <211> 19
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 551
  agectectgg tgcactect 19
 <210> 552
 <211> 25
 <212> DNA
 <213> Artificial Sequence
 <220>
```

```
<223> Synthetic oligonucleotide probe
<400> 552
cgactccctg agcgagcaga tttcc 25
<210> 553
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 553
gctgggcagt cacgagtctt 20
<210> 554
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 554
 aatcctccat ctcagatctt ccag 24
<210> 555
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 555
 cctcagcggt aacagccggc c 21
<210> 556
<211> 15
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 556
 tgggccaagg gctgc 15
<210> 557
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 557
```

```
tggtggataa ccaacaagat gg 22
<210> 558
<211> 34
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 558
gagtctgcat ccacaccact cttaaagttc tcaa 34
<210> 559
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 559
 caggtgctct tttcagtcat gttt 24
<210> 560
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 560
 tggccattct caggacaaga g 21
<210> 561
<211> 26
<212> DNA
<213> Artificial Sequence
<223> synthetic oligonucleotide probe
<400> 561
 cagtaatgcc atttgcctgc ctgcat 26
<210> 562
<211> 19
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 562
 tgcctggaat cacatgaca 19
<210> 563
```

```
<211> 20
<212> DNA
<213> Artificial Sequence
<223> synthetic oligonucleotide probe
<400> 563
 tgtggcacag acccaatcct 20
<210> 564
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 564
 gaccetgaag geeteeggee t 21
<210> 565
<211> 23
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 565
 gagagagga aggcagctat gtc 23
<210> 566
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 566
 cagcccctct ctttcacctg t 21
<210> 567
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 567
 ccatcctgtg cagctgacac acagc 25
<210> 568
<211> 20
<212> DNA
<213> Artificial Sequence
```

```
<220>
<223> Synthetic oligonucleotide probe
<400> 568
 gccaggctat gaggctcctt 20
<210> 569
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 569
ttcaagttcc tgaagccgat tat 23
<210> 570
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 570
 ccaacttccc tccccagtgc cct 23
<210> 571
<211> 26
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 571
 ttggggaagg tagaatttcc ttgtat 26
<210> 572
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 572
 cccttctgcc tcccaattct 20
<210> 573
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
```

```
<400> 573
tetectecgt eccettecte cact 24
<210> 574
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 574
tgagccactg ccttgcatta 20
<210> 575
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 575
 tctgcagacg cgatggataa 20
<210> 576
<211> 26
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 576
 ccgaaaataa aacatcgccc cttctg 26
<210> 577
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 577
 cacgtggcct ttcacactga 20
<210> 578
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 578
 acttgtgaca gcagtatgct gtctt 25
```

```
<210> 579
<211> 26
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 579
 aagcttctgt tcaatcccag cggtcc 26
<210> 580
<211> 22
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 580
 atgcacaggc tttttctggt aa 22
<210> 581
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 581
 gcaggaaacc ttcgaatctg ag 22
<210> 582
<211> 29
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 582
 acacctgagg cacctgagag aggaactct 29
<210> 583
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 583
 gacageceag tacacetgea a 21
<210> 584
<211> 21
<212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 584
 gacggctgga tctgtgagaa a 21
<210> 585
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 585
cacaactgct gaccccgccc a 21
<210> 586
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 586
 ccaggatacg acatgctgca 20
<210> 587
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 587
 aaactccaac ctgtatcaga tgca 24
<210> 588
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 588
 cccccaagcc cttagactct aagcc 25
<210> 589
<211> 19
<212> DNA
<213> Artificial Sequence
<220>
```

```
<223> Synthetic oligonucleotide probe
<400> 589
 gacccggcac cttgctaac 19
<210> 590
<211> 21
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 590
 ggacggtcag tcaggatgac a 21
<210> 591
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 591
ttcggcatca tctcttccct ctccc 25
<210> 592
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 592
 acaaaaaaa gggaacaaaa tacga 25
<210> 593
<211> 28
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 593
 ctttgaatag aagacttctg gacaattt 28
<210> 594
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 594
```

```
ttgcaactgg gaatatacca cgacatgaga 30
<210> 595
<211> 26
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 595
tagggtgcta atttgtgcta taacct 26
<210> 596
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 596
ggctctgagt ctctgcttga 20
<210> 597
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 597
 tccaacaacc attttcctct ggtcc 25
<210> 598
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 598
 aagcagtagc cattaacaag tca 23
<210> 599
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 599
 caagcgtcca ggtttattga 20
<210> 600
```

```
<211> 20
     <212> DNA
     <213> Artificial Sequence
     <223> Synthetic oligonucleotide probe
     <400> 600
      gactacaagg cgctcagcta 20
     <210> 601
     <211> 21
     <212> DNA
     <213> Artificial Sequence
     <220>
     <223> Synthetic oligonucleotide probe
<400> 601
    ccggctggg

<210> 602
    <211> 19
    <212> DNA
    <213> Art:

<220>
    <223> Syn
<400> 602
    cgttcgtg
<210> 603

<210> 603

<211> 22

<212> DNA
      ccggctgggt ctcactcctc c 21
     <213> Artificial Sequence
     <223> Synthetic oligonucleotide probe
      cgttcgtgca gcgtgtgta 19
     <212> DNA
     <213> Artificial Sequence
     <223> Synthetic oligonucleotide probe
      <400> 603
       cttcctcacc acctgcgacg gg 22
      <210> 604
      <211> 23
      <212> DNA
      <213> Artificial Sequence
      <220>
      <223> Synthetic oligonucleotide probe
      <400> 604
       ggtaggcggt cctatagatg gtt 23
      <210> 605
      <211> 23
      <212> DNA
      <213> Artificial Sequence
```

```
<220>
<223> Synthetic oligonucleotide probe
<400> 605
 agatgtggat gaatgcagtg cta 23
<210> 606
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 606
 atcaacaccg ccggcagtta ctgg 24
<210> 607
<211> 23
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 607
 acagagtgta ccgtctgcag aca 23
<210> 608
<211> 19
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 608
 agcctcctgg tgcactcct 19
<210> 609
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 609
 cgactccctg agcgagcaga tttcc 25
<210> 610
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
```

<400> 610 gctgggcagt cacgagtctt 20 <210> 611 <211> 2840 <212> DNA <213> Homo Sapien <400> 611 cccacgcgtc cgagccgccc gagaattaga cacactccgg acgcggccaa 50 aagcaaccga gaggaggga ggcaaaaaca ccgaaaaaca aaaagagaga 100 aacaacaccc aacaactggg gtggggggaa gaaagaaaga aaagaaaccc 150 ctgtggcgcg ccgcctggtt cccgggaaga ctcgccagca ccagggggtg 250 ggggagtgcg agctgaaagc tgctggagag tgagcagccc tagcagggat 300 ggacatgatg ctgttggtgc agggtgcttg ttgctcgaac cagtggctgg 350 cggcggtgct cctcagcctg tgctgcctgc taccctcctg cctcccggct 400 ggacagagtg tggacttccc ctgggcggcc gtggacaaca tgatggtcag 450 aaaaggggac acggcggtgc ttaggtgtta tttggaagat ggagcttcaa 500 agggtgcctg gctgaaccgg tcaagtatta tttttgcggg aggtgataag 550 tggtcagtgg atcctcgagt ttcaatttca acattgaata aaagggacta 600 cagcctccag atacagaatg tagatgtgac agatgatggc ccatacacgt 650 gttctgttca gactcaacat acacccagaa caatgcaggt gcatctaact 700 gtgcaagttc ctcctaagat atatgacatc tcaaatgata tgaccgtcaa 750 tgaaggaacc aacgtcactc ttacttgttt ggccactggg aaaccagagc 800 cttccatttc ttggcgacac atctccccat cagcaaaacc atttgaaaat 850 ggacaatatt tggacattta tggaattaca agggaccagg ctggggaata 900 tgaatgcagt gcggaaaatg ctgtgtcatt cccagatgtg aggaaagtaa 950 aagttgttgt caactttgct cctactattc aggaaattaa atctggcacc 1000 gtgacccccg gacgcagtgg cctgataaga tgtgaaggtg caggtgtgcc 1050 gcctccagcc tttgaatggt acaaaggaga gaagaagctc ttcaatggcc 1100 aacaaggaat tattattcaa aattttagca caagatccat tctcactgtt 1150

accaacqtqa cacaggagca cttcggcaat tatacctgtg tggctgccaa 1200

caagctaggc acaaccaatg cgagcctgcc tcttaaccct ccaagtacag 1250

cccagtatgg aattaccggg agcgctgatg ttcttttctc ctgctggtac 1300 cttgtgttga cactgtcctc tttcaccagc atattctacc tgaagaatgc 1350 cattctacaa taaattcaaa gacccataaa aggcttttaa ggattctctg 1400 aaagtgctga tggctggatc caatctggta cagtttgtta aaagcagcgt 1450 gggatataat cagcagtgct tacatgggga tgatcgcctt ctgtagaatt 1500 gctcattatg taaatacttt aattctactc ttttttgatt agctacatta 1550 ccttgtgaag cagtacacat tgtccttttt ttaagacgtg aaagctctga 1600 aattactttt agaggatatt aattgtgatt tcatgtttgt aatctacaac 1650 ttttcaaaag cattcagtca tggtctgcta ggttgcaggc tgtagtttac 1700 aaaaacgaat attgcagtga atatgtgatt ctttaaggct gcaatacaag 1750 cattcagttc cctgtttcaa taagagtcaa tccacattta caaagatgca 1800 tttttttctt ttttgataaa aaagcaaata atattgcctt cagattattt 1850 cttcaaaata taacacatat ctagattttt ctgcttgcat gatattcagg 1900 tttcaggaat gagccttgta atataactgg ctgtgcagct ctgcttctct 1950 ttcctgtaag ttcagcatgg gtgtgccttc atacaataat atttttctct 2000 ttgtctccaa ctaatataaa atgttttgct aaatcttaca atttgaaagt 2050 aaaaataaac cagagtgatc aagttaaacc atacactatc tctaagtaac 2100 gaaggagcta ttggactgta aaaatctctt cctgcactga caatggggtt 2150 tgagaatttt gccccacact aactcagttc ttgtgatgag agacaattta 2200 ataacagtat agtaaatata ccatatgatt tctttagttg tagctaaatg 2250 ttagatccac cgtgggaaat cattcccttt aaaatgacag cacagtccac 2300 tcaaaggatt gcctagcaat acagcatctt ttcctttcac tagtccaagc 2350 caaaaatttt aagatgattt gtcagaaagg gcacaaagtc ctatcaccta 2400 atattacaag agttggtaag cgctcatcat taattttatt ttgtggcagg 2450 tattatgaca gtcgacctgg agggtatgga tatggatatg gacgttccag 2500 agactataat ggcagaaacc agggtggtta tgaccgctac tcaggaggaa 2550 attacagaga caattatgac aactgaaatg agacatgcac ataatataga 2600 tacacaagga ataatttctg atccaggatc gtccttccaa atggctgtat 2650 ttataaaggt ttttggagct gcactgaagc atcttatttt atagtatatc 2700

aaccttttgt ttttaaattg acctgccaag gtagctgaag accttttaga 2750 cagttccatc tttttttta aattttttct gcctatttaa agacaaatta 2800 tgggacgttt gtcaaaaaaa aaaaaaaaa aaaaaaaaa 2840

<210> 612

<211> 352

<212> PRT

<213> Homo Sapien

<400> 612

Met Met Leu Leu Val Gln Gly Ala Cys Cys Ser Asn Gln Trp Leu
1 10 15

Ala Ala Val Leu Leu Ser Leu Cys Cys Leu Leu Pro Ser Cys Leu 20 25 30

Pro Ala Gly Gln Ser Val Asp Phe Pro Trp Ala Ala Val Asp Asn 35 40 45

Met Met Val Arg Lys Gly Asp Thr Ala Val Leu Arg Cys Tyr Leu 50 55 60

Glu Asp Gly Ala Ser Lys Gly Ala Trp Leu Asn Arg Ser Ser Ile 65 70 75

Ile Phe Ala Gly Gly Asp Lys Trp Ser Val Asp Pro Arg Val Ser 80 85 90

Ile Ser Thr Leu Asn Lys Arg Asp Tyr Ser Leu Gln Ile Gln Asn 95 100 105

Val Asp Val Thr Asp Asp Gly Pro Tyr Thr Cys Ser Val Gln Thr 110 115 120

Gln His Thr Pro Arg Thr Met Gln Val His Leu Thr Val Gln Val 125 130 135

Pro Pro Lys Ile Tyr Asp Ile Ser Asn Asp Met Thr Val Asn Glu 140 145 150

Gly Thr Asn Val Thr Leu Thr Cys Leu Ala Thr Gly Lys Pro Glu 155 160 165

Pro Ser Ile Ser Trp Arg His Ile Ser Pro Ser Ala Lys Pro Phe 170 175 180

Glu Asn Gly Gln Tyr Leu Asp Ile Tyr Gly Ile Thr Arg Asp Gln 185 190 195

Ala Gly Glu Tyr Glu Cys Ser Ala Glu Asn Ala Val Ser Phe Pro 200 205 210

Asp Val Arg Lys Val Lys Val Val Val Asn Phe Ala Pro Thr Ile 215 220 225

Gln Glu Ile Lys Ser Gly Thr Val Thr Pro Gly Arg Ser Gly Leu

240 235 230 Ile Arg Cys Glu Gly Ala Gly Val Pro Pro Pro Ala Phe Glu Trp 250 Tyr Lys Gly Glu Lys Lys Leu Phe Asn Gly Gln Gln Gly Ile Ile 265 Ile Gln Asn Phe Ser Thr Arg Ser Ile Leu Thr Val Thr Asn Val 275 Thr Gln Glu His Phe Gly Asn Tyr Thr Cys Val Ala Ala Asn Lys 300 Leu Gly Thr Thr Asn Ala Ser Leu Pro Leu Asn Pro Pro Ser Thr 310 305 Ala Gln Tyr Gly Ile Thr Gly Ser Ala Asp Val Leu Phe Ser Cys Trp Tyr Leu Val Leu Thr Leu Ser Ser Phe Thr Ser Ile Phe Tyr 340 Leu Lys Asn Ala Ile Leu Gln 350

<210> 613 <211> 1797 <212> DNA <213> Homo Sapien

<400> 613 agtggttcga tgggaaggat ctttctccaa gtggttcctc ttgaggggag 50 cattlctgct ggctccagga ctttggccat ctataaagct tggcaatgag 100 aaataagaaa attctcaagg aggacgagct cttgagtgag acccaacaag 150 ctgcttttca ccaaattgca atggagcctt tcgaaatcaa tgttccaaag 200 cccaagagga gaaatggggt gaacttctcc ctagctgtgg tggtcatcta 250 cctgatcctg ctcaccgctg gcgctgggct gctggtggtc caagttctga 300 atctgcaggc gcggctccgg gtcctggaga tgtatttcct caatgacact 350 ctggcggctg aggacagccc gtccttctcc ttgctgcagt cagcacaccc 400 tggagaacac ctggctcagg gtgcatcgag gctgcaagtc ctgcaggccc 450 aactcacctg ggtccgcgtc agccatgagc acttgctgca gcgggtagac 500 aacttcactc agaacccagg gatgttcaga atcaaaggtg aacaaggcgc 550 cccaggtctt caaggtcaca agggggccat gggcatgcct ggtgcccctg 600 gcccgccggg accacctgct gagaagggag ccaagggggc tatgggacga 650 gatggagcaa caggcccctc gggaccccaa ggcccaccgg gagtcaaggg 700 agaggcgggc ctccaaggac cccagggtgc tccagggaag caaggagcca 750 ctggcacccc aggaccccaa ggagagaagg gcagcaaagg cgatgggggt 800 ctcattggcc caaaagggga aactggaact aagggagaga aaggagacct 850 gggtctccca ggaagcaaag gggacagggg catgaaagga gatgcagggg 900 tcatggggcc tcctggagcc caggggagta aaggtgactt cgggaggcca 950 ggcccaccag gtttggctgg ttttcctgga gctaaaggag atcaaggaca 1000 acctggactg cagggtgttc cgggccctcc tggtgcagtg ggacacccag 1050 gtgccaaggg tgagcctggc agtgctggct cccctgggcg agcaggactt 1100 ccagggagcc ccgggagtcc aggagccaca ggcctgaaag gaagcaaagg 1150 ggacacagga cttcaaggac agcaaggaag aaaaggagaa tcaggagttc 1200 caggccctgc aggtgtgaag ggagaacagg ggagcccagg gctggcaggt 1250 cccaagggag cccctggaca agctggccag aagggagacc agggagtgaa 1300 aggatettet ggggageaag gagtaaaggg agaaaaaggt gaaagaggtg 1350 aaaactcagt gtccgtcagg attgtcggca gtagtaaccg aggccgggct 1400 gaagtttact acagtggtac ctgggggaca atttgcgatg acgagtggca 1450 aaattotgat gocattgtot totgoogoat gotgggttac tocaaaggaa 1500 gggccctgta caaagtggga gctggcactg ggcagatctg gctggataat 1550 gttcagtgtc ggggcacgga gagtaccctg tggagctgca ccaagaatag 1600 ctggggccat catgactgca gccacgagga ggacgcaggc gtggagtgca 1650 gcgtctgacc cggaaaccct ttcacttctc tgctcccgag gtgtcctcgg 1700 gctcatatgt gggaaggcag aggatctctg aggagttccc tggggacaac 1750 tgagcagcct ctggagaggg gccattaata aagctcaaca tcattga 1797

<210> 614

<211> 520

<212> PRT

<213> Homo Sapien

<400> 614

Met Arg Asn Lys Lys Ile Leu Lys Glu Asp Glu Leu Leu Ser Glu
1 5 10 15

Thr Gln Gln Ala Ala Phe His Gln Ile Ala Met Glu Pro Phe Glu 20 25 30

Ile Asn Val Pro Lys Pro Lys Arg Arg Asn Gly Val Asn Phe Ser Leu Ala Val Val Ile Tyr Leu Ile Leu Leu Thr Ala Gly Ala Gly Leu Leu Val Val Gln Val Leu Asn Leu Gln Ala Arg Leu Arg Val Leu Glu Met Tyr Phe Leu Asn Asp Thr Leu Ala Ala Glu Asp Ser Pro Ser Phe Ser Leu Leu Gln Ser Ala His Pro Gly Glu His 100 Leu Ala Gln Gly Ala Ser Arg Leu Gln Val Leu Gln Ala Gln Leu 115 Thr Trp Val Arg Val Ser His Glu His Leu Leu Gln Arg Val Asp Asn Phe Thr Gln Asn Pro Gly Met Phe Arg Ile Lys Gly Glu Gln Gly Ala Pro Gly Leu Gln Gly His Lys Gly Ala Met Gly Met Pro Gly Ala Pro Gly Pro Pro Pro Pro Ala Glu Lys Gly Ala Lys 170 Gly Ala Met Gly Arg Asp Gly Ala Thr Gly Pro Ser Gly Pro Gln Gly Pro Pro Gly Val Lys Gly Glu Ala Gly Leu Gln Gly Pro Gln Gly Ala Pro Gly Lys Gln Gly Ala Thr Gly Thr Pro Gly Pro Gln Gly Glu Lys Gly Ser Lys Gly Asp Gly Gly Leu Ile Gly Pro Lys Gly Glu Thr Gly Thr Lys Gly Glu Lys Gly Asp Leu Gly Leu Pro Gly Ser Lys Gly Asp Arg Gly Met Lys Gly Asp Ala Gly Val Met Gly Pro Pro Gly Ala Gln Gly Ser Lys Gly Asp Phe Gly Arg Pro Gly Pro Pro Gly Leu Ala Gly Phe Pro Gly Ala Lys Gly Asp Gln Gly Gln Pro Gly Leu Gln Gly Val Pro Gly Pro Pro Gly Ala Val Gly His Pro Gly Ala Lys Gly Glu Pro Gly Ser Ala Gly Ser Pro

	320					325					330
Gly Arg Ala	Gly Leu 335	Pro	Gly	Ser	Pro	Gly 340	Ser	Pro	Gly	Ala	Thr 345
Gly Leu Lys	Gly Ser 350	Lys	Gly	Asp	Thr	Gly 355	Leu	Gln	Gly	Gln	Gln 360
Gly Arg Lys	Gly Glu 365	Ser	Gly	Val	Pro	Gly 370	Pro	Ala	Gly	Val	Lys 375
Gly Glu Gln	Gly Ser 380	Pro	Gly	Leu	Ala	Gly 385	Pro	Lys	Gly	Ala	Pro 390
Gly Gln Ala	Gly Gln 395	Lys	Gly	Asp	GÌn	Gly 400	Val	Lys	Gly	Ser	Ser 405
Gly Glu Gln	Gly Val 410	Lys	Gly	Glu	Lys	Gly 415	Glu	Arg	Gly	Glu	Asn 420
Ser Val Ser	Val Arg 425	Ile	Val	Gly	Ser	Ser 430	Asn	Arg	Gly	Arg	Ala 435
Glu Val Tyr	Tyr Ser 440	Gly	Thr	Trp	Gly	Thr 445	Ile	Cys	Asp	Asp	Glu 450
Trp Gln Asn	Ser Asp 455	Ala	Ile	Val	Phe	Cys 460	Arg	Met	Leu	Gly	Tyr 465
Ser Lys Gly	Arg Ala 470	Leu	Tyr	Lys	Val	Gly 475	Ala	Gly	Thr	Gly	Gln 480
Ile Trp Leu	Asp Asn 485	Val	Gln	Cys	Arg	Gly 490	Thr	Glu	Ser	Thr	Leu 495
Trp Ser Cys	Thr Lys	Asn	Ser	Trp	Gly	His 505	His	Asp	Cys	Ser	His 510
Glu Glu Asp	Ala Gly 515		Glu	Cys	Ser	Val 520					
<210> 615											
<211> 647											

<212> DNA

<213> Homo Sapien

<400> 615

cccacgcgtc cgaaggcaga caaaggttca tttgtaaaga agctccttcc 50 agcacctcct ctcttctcct tttgcccaaa ctcacccagt gagtgtgagc 100 atttaagaag catcctctgc caagaccaaa aggaaagaag aaaaagggcc 150 aaaagccaaa atgaaactga tggtacttgt tttcaccatt gggctaactt 200 tgctgctagg agttcaagcc atgcctgcaa atcgcctctc ttgctacaga 250 aagatactaa aagatcacaa ctgtcacaac cttccggaag gagtagctga 300 cctgacacag attgatgtca atgtccagga tcatttctgg gatgggaagg 350 gatgtgagat gatctgttac tgcaacttca gcgaattgct ctgctgccca 400 aaagacgttt tctttggacc aaagatctct ttcgtgattc cttgcaacaa 450 tcaatgagaa tcttcatgta ttctggagaa caccattcct gatttcccac 500 aaactgcact acatcagtat aactgcatt ctagtttcta tatagtgcaa 550 tagagcatag attctataaa ttcttacttg tctaagacaa gtaaatctgt 600 gttaaacaag tagtaataaa agttaattca atctaaaaaa aaaaaaa 647

<210> 616

<211> 98

<212> PRT

<213> Homo Sapien

<400> 616

Met Lys Leu Met Val Leu Val Phe Thr Ile Gly Leu Thr Leu Leu
1 5 10 15

Leu Gly Val Gln Ala Met Pro Ala Asn Arg Leu Ser Cys Tyr Arg
20 25 30

Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val
35 40 45

Ala Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp 50 55 60

Asp Gly Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu
65 70 75

Leu Leu Cys Cys Pro Lys Asp Val Phe Phe Gly Pro Lys Ile Ser 80 85 90

Phe Val Ile Pro Cys Asn Asn Gln 95

<210> 617

<211> 2558

<212> DNA

<213> Homo Sapien

<400> 617

cccacgcgtc cgcggacgcg tgggctggac cccaggtctg gagcgaattc 50 cagcctgcag ggctgataag cgaggcatta gtgagattga gagagacttt 100 accccgccgt ggtggttgga gggcgcag tagagcagca gcacaggcgc 150 gggtcccggg aggccggctc tgctcgcgcc gagatgtgga atctccttca 200 cgaaaccgac tcggctgtgg ccaccgcgcg ccgcccgcgc tggctgtgg 250 ctggggcgct ggtgctgcg ggtggcttct ttctcctcgg cttcctcttc 300

gggtggttta taaaatcctc caatgaagct actaacatta ctccaaagca 350 taatatgaaa gcatttttgg atgaattgaa agctgagaac atcaagaagt 400 tcttacataa ttttacacag ataccacatt tagcaggaac agaacaaaac 450 tttcagcttq caaaqcaaat tcaatcccag tggaaagaat ttggcctgga 500 ttctgttgag ctagctcatt atgatgtcct gttgtcctac ccaaataaga 550 ctcatcccaa ctacatctca ataattaatg aagatggaaa tgagattttc 600 aacacatcat tatttgaacc acctcctcca ggatatgaaa atgtttcgga 650 tattgtacca cctttcagtg ctttctctcc tcaaggaatg ccagagggcg 700 atctagtgta tgttaactat gcacgaactg aagacttctt taaattggaa 750 cgggacatga aaatcaattg ctctgggaaa attgtaattg ccagatatgg 800 qaaagttttc aqaqqaaata aggttaaaaa tgcccagctg gcaggggcca 850 aaggagtcat tetetactee gaccetgetg actaetttge teetggggtg 900 aagtcctatc cagacggttg gaatcttcct ggaggtggtg tccagcgtgg 950 aaatatccta aatctgaatg gtgcaggaga ccctctcaca ccaggttacc 1000 cagcaaatga atatgcttat aggcgtggaa ttgcagaggc tgttggtctt 1050 ccaagtattc ctgttcatcc aattggatac tatgatgcac agaagctcct 1100 agaaaaaatg ggtggctcag caccaccaga tagcagctgg agaggaagtc 1150 tcaaaqtqcc ctacaatqtt qgacctggct ttactggaaa cttttctaca 1200 caaaaaqtca aqatqcacat ccactctacc aatgaaqtga cgagaattta 1250 caatqtqata qqtactctca qaqqaqcagt ggaaccagac agatatgtca 1300 ttctgggagg tcaccgggac tcatgggtgt ttggtggtat tgaccctcag 1350 agtggagcag ctgttgttca tgaaattgtg aggagctttg gaacactgaa 1400 aaaggaaggg tggagaccta gaagaacaat tttgtttgca agctgggatg 1450 caqaaqaatt tggtcttctt ggttctactg agtgggcaga ggagaattca 1500 agactectte aagagegtgg egtggettat attaatgetg acteatetat 1550 agaaggaaac tacactctga gagttgattg tacaccgctg atgtacagct 1600 tggtacacaa cctaacaaaa gagctgaaaa gccctgatga aggctttgaa 1650 ggcaaatctc tttatgaaag ttggactaaa aaaagtcctt ccccagagtt 1700 caqtqqcatq cccaqqataa qcaaattqqq atctqqaaat qattttqaqq 1750

tgttcttcca acgacttgga attgcttcag gcagagcacg gtatactaaa 1800 aattgggaaa caaacaaatt cagcggctat ccactgtatc acagtgtcta 1850 tgaaacatat gagttggtgg aaaagtttta tgatccaatg tttaaatatc 1900 acctcactgt ggcccaggtt cgaggaggga tggtgtttga gctagccaat 1950 tccatagtgc tcccttttga ttgtcgagat tatgctgtag ttttaagaaa 2000 gtatgctgac aaaatctaca gtatttctat gaaacatcca caggaaatga 2050 agacatacag tgtatcattt gattcacttt tttctgcagt aaagaatttt 2100 acagaaattg cttccaagtt cagtgagaga ctccaggact ttgacaaaag 2150 caacccaata gtattaagaa tgatgaatga tcaactcatg tttctggaaa 2200 gagcatttat tgatccatta gggttaccag acaggccttt ttataggcat 2250 gtcatctatg ctccaagcag ccacaacaag tatgcagggg agtcattccc 2300 aggaatttat gatgctctgt ttgatattga aagcaaagtg gacccttcca 2350 aggcctgggg agaagtgaag agacagattt atgttgcagc cttcacagtg 2400 caggcagctg cagagacttt gagtgaagta gcctaagagg attttttaga 2450 gaatccgtat tgaatttgtg tggtatgtca ctcagaaaga atcgtaatgg 2500 gtatattgat aaattttaaa attggtatat ttgaaataaa gttgaatatt 2550 atatataa 2558

<210> 618

<211> 750

<212> PRT

<213> Homo Sapien

<400> 618

Met Trp Asn Leu Leu His Glu Thr Asp Ser Ala Val Ala Thr Ala 1 5 10 15

Arg Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly 20 25 30

Gly Phe Phe Leu Cly Phe Leu Phe Gly Trp Phe Ile Lys Ser 35 40 45

Ser Asn Glu Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala 50 55 60

Phe Leu Asp Glu Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu His
65 70 75

Gln Leu Ala Lys Gln Ile Gln Ser Gln Trp Lys Glu Phe Gly Leu Asp Ser Val Glu Leu Ala His Tyr Asp Val Leu Leu Ser Tyr Pro 115 110 Asn Lys Thr His Pro Asn Tyr Ile Ser Ile Ile Asn Glu Asp Gly 135 125 Asn Glu Ile Phe Asn Thr Ser Leu Phe Glu Pro Pro Pro Gly 150 140 Tyr Glu Asn Val Ser Asp Ile Val Pro Pro Phe Ser Ala Phe Ser Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr Val Asn Tyr Ala Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met Lys Ile Asn Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val Phe Arg 210 200 Gly Asn Lys Val Lys Asn Ala Gln Leu Ala Gly Ala Lys Gly Val 215 Ile Leu Tyr Ser Asp Pro Ala Asp Tyr Phe Ala Pro Gly Val Lys 240 230 Ser Tyr Pro Asp Gly Trp Asn Leu Pro Gly Gly Gly Val Gln Arg 245 Gly Asn Ile Leu Asn Leu Asn Gly Ala Gly Asp Pro Leu Thr Pro 260 Gly Tyr Pro Ala Asn Glu Tyr Ala Tyr Arg Arg Gly Ile Ala Glu Ala Val Gly Leu Pro Ser Ile Pro Val His Pro Ile Gly Tyr Tyr Asp Ala Gln Lys Leu Leu Glu Lys Met Gly Gly Ser Ala Pro Pro Asp Ser Ser Trp Arg Gly Ser Leu Lys Val Pro Tyr Asn Val Gly 320 Pro Gly Phe Thr Gly Asn Phe Ser Thr Gln Lys Val Lys Met His Ile His Ser Thr Asn Glu Val Thr Arg Ile Tyr Asn Val Ile Gly Thr Leu Arg Gly Ala Val Glu Pro Asp Arg Tyr Val Ile Leu Gly Gly His Arg Asp Ser Trp Val Phe Gly Gly Ile Asp Pro Gln Ser

				380					385					390
Gly	Ala	Ala	Val	Val 395	His	Glu	Ile	Val	Arg 400	Ser	Phe	Gly	Thr	Leu 405
Lys	Lys	Glu	Gly	Trp 410	Arg	Pro	Arg	Arg	Thr 415	Ile	Leu	Phe	Ala	Ser 420
Trp	Asp	Ala	Glu	Glu 425	Phe	Gly	Leu	Leu	Gly 430	Ser	Thr	Glu	Trp	Ala 435
Glu	Glu	Asn	Ser	Arg 440	Leu	Leu	Gln	Glu	Arg 445	Gly	Val	Ala	Tyr	Ile 450
Asn	Ala	Asp	Ser	Ser 455	Ile	Glu	Gly	Asn	Tyr 460	Thr	Leu	Arg	Val	Asp 465
Cys	Thr	Pro	Leu	Met 470	Tyr	Ser	Leu	Val	His 475	Asn	Leu	Thr	Lys	Glu 480
Leu	Lys	Ser	Pro	Asp 485	Glu	Gly	Phe	Glu	Gly 490	Lys	Ser	Leu	Tyr	Glu 495
Ser	Trp	Thr	Lys	Lys 500	Ser	Pro	Ser	Pro	Glu 505	Phe	Ser	Gly	Met	Pro 510
Arg	Ile	Ser	Lys	Leu 515	Gly	Ser	Gly	Asn	Asp 520	Phe	Glu	Val	Phe	Phe 525
Gln	Arg	Leu	Gly	Ile 530	Ala	Ser	Gly	Arg	Ala 535	Arg	Tyr	Thr	Lys	Asn 540
Trp	Glu	Thr	Asn	Lys 545	Phe	Ser	Gly	Tyr	Pro 550	Leu	Tyr	His	Ser	Val 555
Tyr	Glu	Thr	Tyr	Glu 560	Leu	Val	Glu	Lys	Phe 565	Tyr	Asp	Pro	Met	Phe 570
Lys	Tyr	His	Leu	Thr 575	Val	Ala	Gln	Val	Arg 580	Gly	Gly	Met	Val	Phe 585
Glu	Leu	Ala	Asn	Ser 590	Ile	Val	Leu	Pro	Phe 595		Cys	Arg	Asp	Tyr 600
Ala	Val	Val	Leu	Arg 605	Lys	Tyr	Ala	Asp	Lys 610		Tyr	Ser	Ile	Ser 615
Met	Lys	His	Pro	Gln 620		Met	Lys	Thr	Tyr 625		Val	Ser	Phe	Asp 630
Ser	Leu	Phe	Ser	Ala 635		Lys	Asn	Phe	Thr 640		Ile	Ala	Ser	Lys 645
Phe	Ser	Glu	Arg	Leu 650		Asp	Phe	Asp	Lys 655		Asn	Pro) Ile	Val 660
Leu	Arg	Met	Met	Asn 665		Gln	Leu	Met	Phe 670	Leu	Glu	Arg	, Ala	Phe 675

```
Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg His Val
                 680
Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr Ala Gly Glu Ser Phe
                                     700
                 695
Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile Glu Ser Lys Val Asp
                 710
                                     715
Pro Ser Lys Ala Trp Gly Glu Val Lys Arg Gln Ile Tyr Val Ala
Ala Phe Thr Val Gln Ala Ala Glu Thr Leu Ser Glu Val Ala
<210> 619
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 619
 agatgtgaag gtgcaggtgt gccg 24
<210> 620
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 620
 quacatcage geteceggta attec 25
<210> 621
<211> 46
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 621
 ccagcetttg aatggtacaa aggagagaag aagetettea atggee 46
<210> 622
<211> 25
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 622
```

ccaaactcac ccagtgagtg tgagc 25

```
<210> 623
<211> 25
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 623
  tgggaaatca ggaatggtgt tetec 25
<210> 624
<211> 50
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic Oligonucleotide probe
<400> 624
cttgttttca ccattggget aactttgctg ctaggagttc aagccatgcc 50
```